INDUSTRIAL MEDICINE AND SURGERY

Volume 24 MARCH 1955 Number 3

Plumbism?

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By the Intravenous Route, brilliant results, with spectacular rapidity, are reported in plumbism **and** other heavy metal poisoning.[1, 2, 3, 4] Lead encephalopathy is overcome without damage to the organism.

For follow-up, and sole therapy in milder cases, Calcium Disodium VERSENATE is **NOW ALSO AVAILABLE IN TABLET FORM** for oral administration. Recommended dosage: for adults, 2 tablets q.i.d.; for children, 2 tablets per 35 pounds of body weight in divided doses.

Intravenous Solution Calcium Disodium VERSENATE is available in boxes of six 5 cc. ampuls, each containing 1 gram for dilution according to instructions accompanying each ampul.

Tablets Calcium Disodium VERSENATE (500 mg. each) are supplied in bottles of 250 tablets.

REFERENCES

1. Goetz, F.: Cases from The Medical Grand Rounds, Massachusetts General Hospital, Am. Pract. & Digest Treat. 5:219 (Mar.) 1954.
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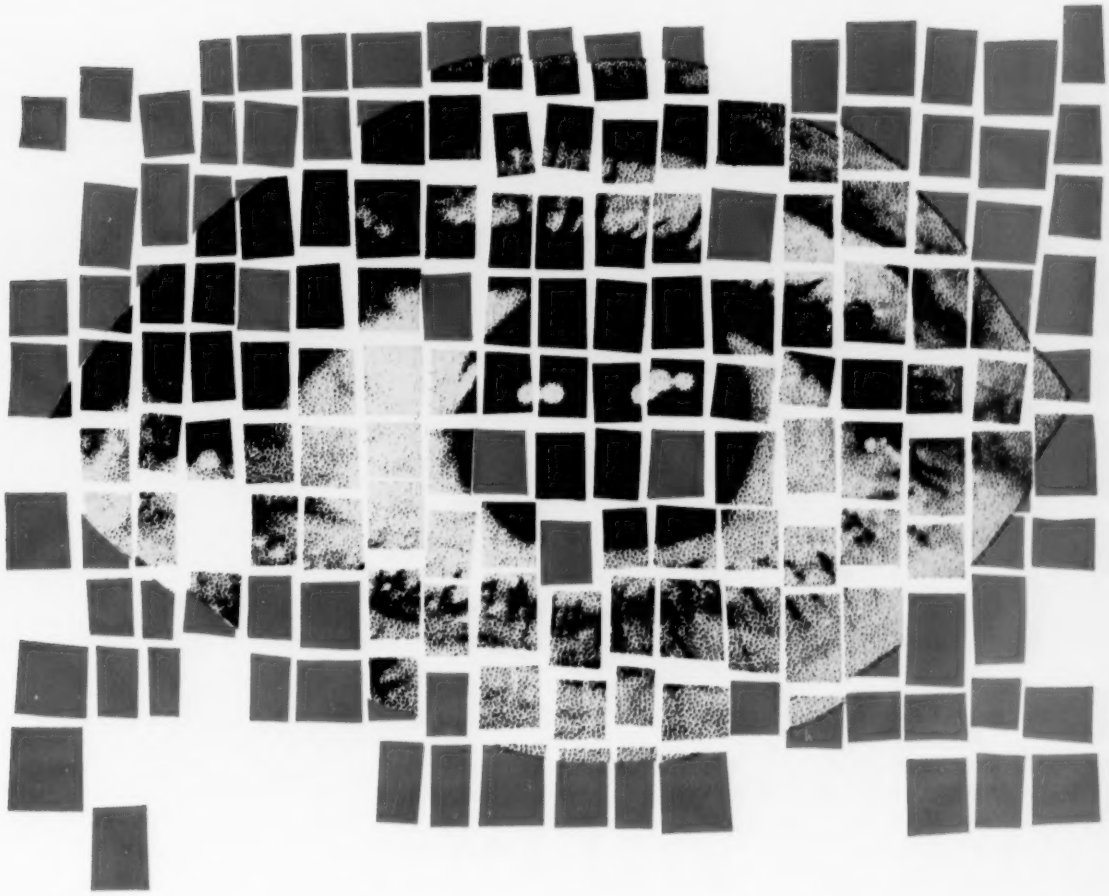

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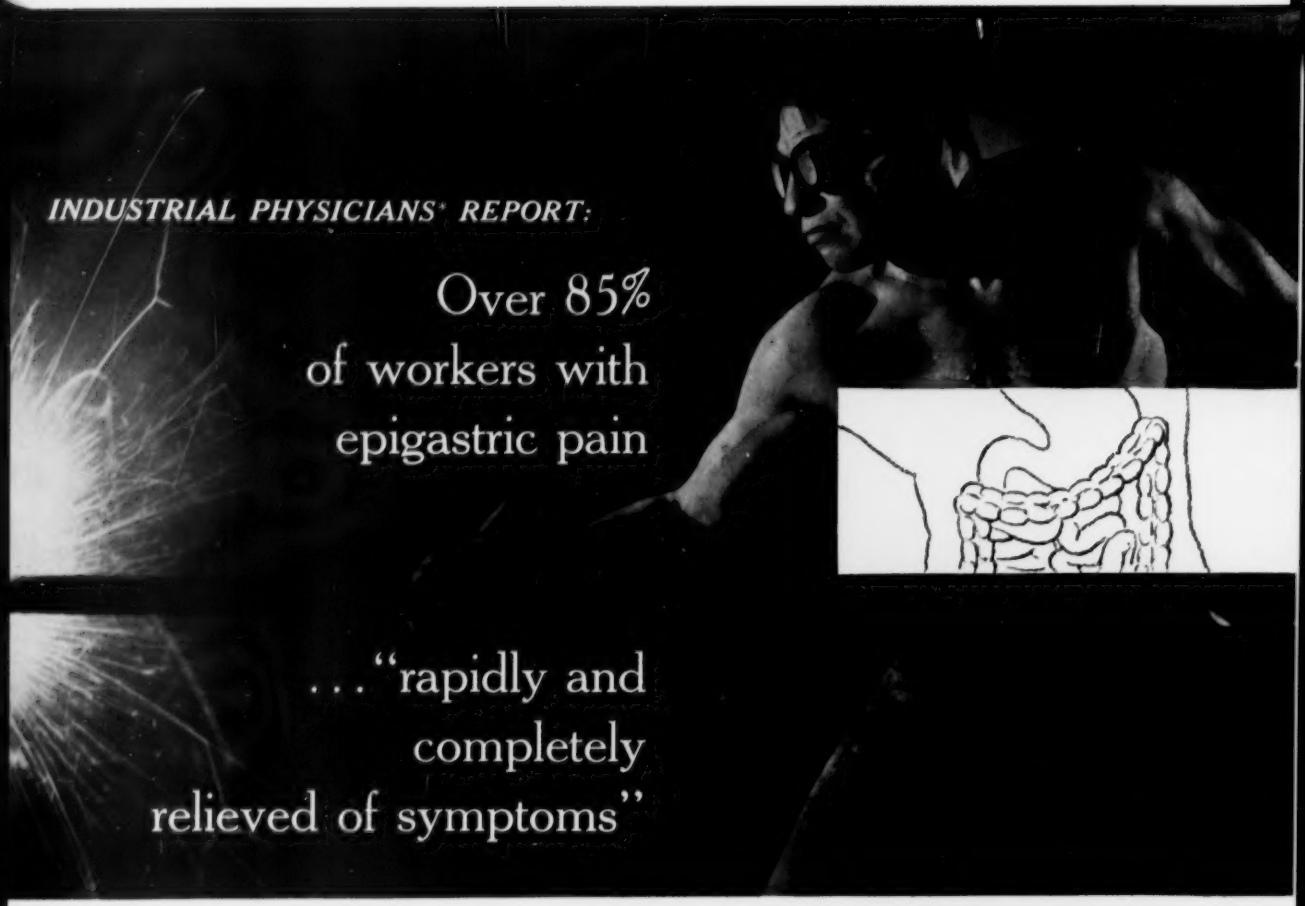

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*Frank W. Barden, M.D., Paul S. Hill, M.D., William F. Mahoney, M.D., and Kenneth J. Cuneo, M.D., in a report from the Medical Department of the Saco-Lowell Shops and the Webber Memorial Hospital, Biddeford, Maine; published in the January, 1954 issue of the Journal of the Maine Medical Association (Vol. XXXXV, No. 1, Page 11).

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This Journal is dedicated to the advancement of sound industrial medicine, including the surgery of industrial trauma. To that end its varying contents will embrace scientific papers, reports, digests, news items and official statements, together with editorial comment. The editorial policy is to avoid undue censorship. Some contributions ably prepared will be published although contravening the personal opinions of the editors. Care will be exercised in checking the accuracy of known facts, as printed, but in all other respects statements and opinions are those of the author and may not be shared by the editors. On any article, the editors reserve the right to comment favorably or otherwise, in the current or any subsequent issue. On this basis, contributions are invited. The opinions expressed in any contributions, including the editorials of this Journal, do not necessarily reflect the attitude or opinions of any associated organization.

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Personal

DUANE L. BLOCK, M.D., has been appointed Physician-in-Charge of medical services at the Ford Motor Company's Rouge Plant, Dearborn, Michigan. He succeeds HARLEY L. KRIEGER, M.D., who has been named Special Assistant to the Medical Director. DR. BLOCK will be responsible for all Rouge medical activities including operation of the plant hospital. He will report to EARLE A. IRVIN, M.D., Company Medical Director. A native of Madison, Wisconsin, DR. BLOCK attended the University of Wisconsin where he received a Bachelor of Science Degree in 1949 and a Doctor of Medicine Degree in 1951. He served his internship at Harper Hospital, Detroit, in 1951-52. He had been associated with General Motors since July, 1952, when he enrolled in the corporation's Industrial Physicians Training Program and was assigned to the Cadillac Motor Car Division under the supervision of DR. IRVIN, who was then Medical Director there. He became plant physician at Cadillac in October, 1952, and held that position until January 1, 1954, when he was appointed Medical Director of GM's Technical Center.

PROFESSOR JACOB CHOLAK, Associate Professor of Industrial Health in the University of Cincinnati College of Medicine, and Director of the Division of Industrial Hygiene Technology in the University's Institute of Industrial Health, was named "Eminent Chemist" for 1955 by the Cincinnati Section of the American Chemical Society at a meeting on February 9. PROFESSOR CHOLAK received his Chemical Engineering Degree from the University of Cincinnati in 1924. He became associated with what is now the Institute of Industrial Health in 1926.

HARRY B. BURR has been appointed to the newly created post of Administrator of Medical Services for Westinghouse Electric Corporation, of Pittsburgh. MR. BURR is a graduate of the University of Michigan. For the last 14 years he has been Business Manager of the Medical Department of Chrysler Corporation at Detroit. In his new position he will be responsible for formulating and recommending policies

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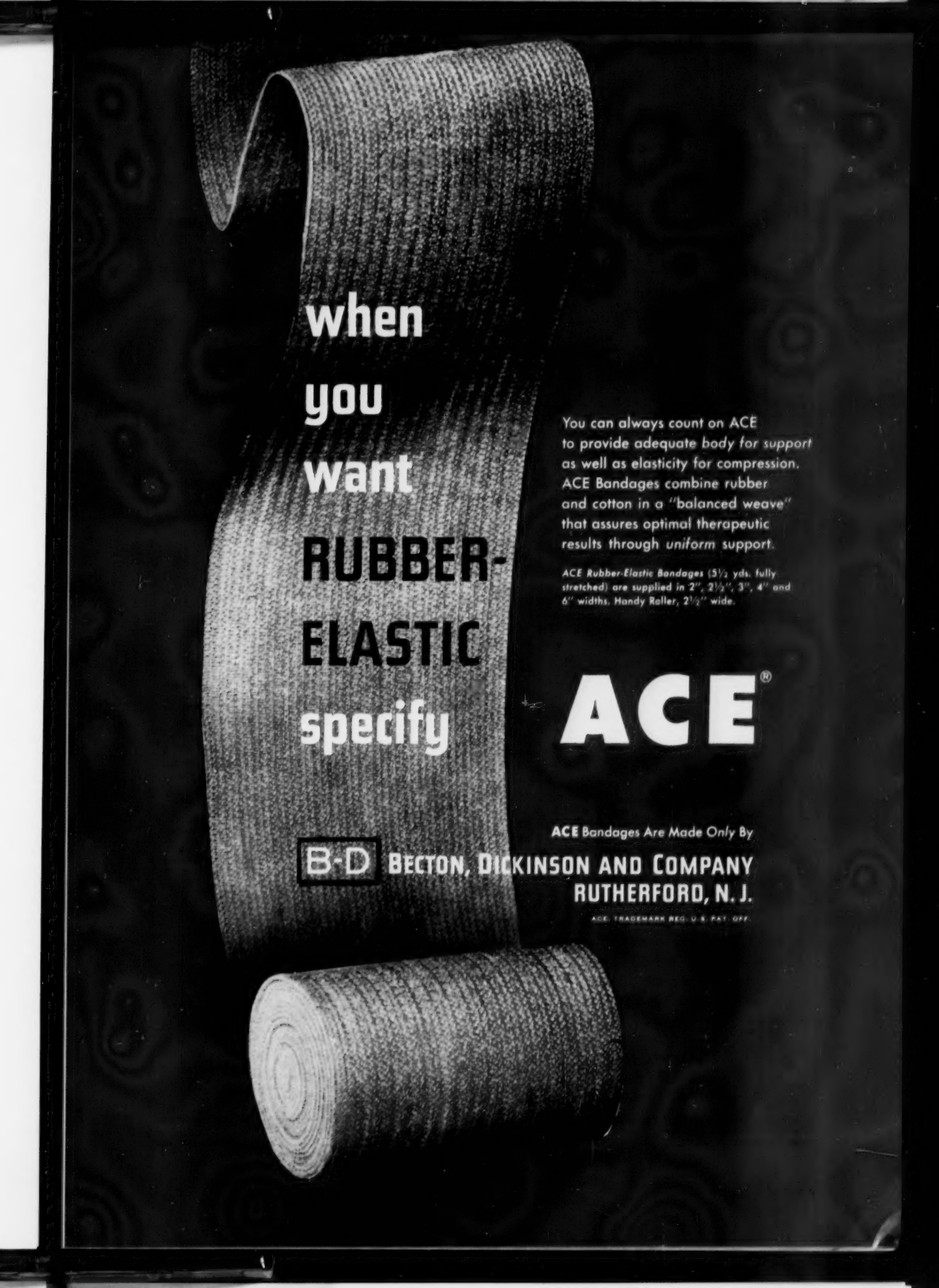
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and procedures in the field of Medical Department Administration and for furnishing guidance and assistance to medical and industrial relations representatives in the various divisions of the company. In professional matters, he will be assisted through a consultation arrangement with the University of Pittsburgh's Graduate School of Public Health. Representing the University will be A. G. KAMMER, M.D., Head of the Department of Occupational Health.

DEAN WILLIAM S. MIDDLETON of the University of Wisconsin Medical School has been granted a one-year leave of absence, effective March 1, to permit him to become Chief Medical Director of the U.S. Veterans Administration.

NORFOLK NAVAL SHIPYARD, Portsmouth, Virginia, has vacancies for civilian doctors seeking positions in the field of industrial medicine. These would replace Navy medical officers now serving there. Qualifications range from completion of an internship to two years of progressively responsible professional experience in industrial or occupational medicine. Further information may be obtained from S. J. CASEY, Employment Superintendent.

A SYMPOSIUM on "Skin Diseases Due to Cutting Oils and Lubricants" will be a feature of the 10th Annual Meeting of the American Society of Lubrication Engineers at the Hotel Sherman, Chicago, April 13-15, 1955. Chairman and Moderator will be CLARENCE S. LIVINGOOD, M.D., Physician-in-Charge, Division of Dermatology, Henry Ford Hospital, Detroit. Among the panel members, E. A. IRVIN, M.D., Medical Director, Ford Motor Company, will present "Dermatitis—A Problem to Industry."

FRANK PRINCI, M.D., Secretary of the AMA Section on Preventive and Industrial Medicine and Public Health, and HUGH A. KUHN, M.D., Secretary of the AMA Section of Otolaryngology, announce a joint meeting of these Sections at the Atlantic City meeting of the AMA on Thursday, June 9, at 3:00 in the afternoon. This session will be in the form of a mock trial directed by HOWARD HOUSE, M.D., of Los Angeles, entitled "It Could Be

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You," and it is being given under the auspices of the Sub-Committee on Noise in Industry of the Committee on Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology. This mock trial has been presented by the American Academy of Ophthalmology and Otolaryngology in New York City with great success.

DANIEL C. BRAUN, M.D., Medical Director, Industrial Hygiene Foundation, and D. JOHN LAUER, M.D., Medical Director, Jones & Laughlin Steel Corporation, are supervising the course in Industrial Medicine and Hygiene for senior students at the University of Pittsburgh School of Medicine. In addition to planning the program of 22 sessions, DRS. BRAUN and LAUER will present some of the lectures; others will be given by guest lecturers who are specialists in the various fields. The University of Pittsburgh School of Medicine was one of the first to include such a program in its curriculum. T. LYLE HAZLETT, M.D., is Professor of Industrial Hygiene and Chairman of the Department.

AMA ARCHIVES *of Industrial Health*" is the new name of the Journal heretofore known as *Archives of Industrial Hygiene and Occupational Medicine*. The original title was a combination of the two Journals *Occupational Medicine*, and *Journal of Industrial Hygiene and Toxicology*. The latter was started in 1919 by a group at Harvard—DR. DAVID EDSALL, DR. CECIL DRINKER, and DR. KATHERINE DRINKER. The change in title involves closer identification of the *Archives* with the work of the Council on Indus-

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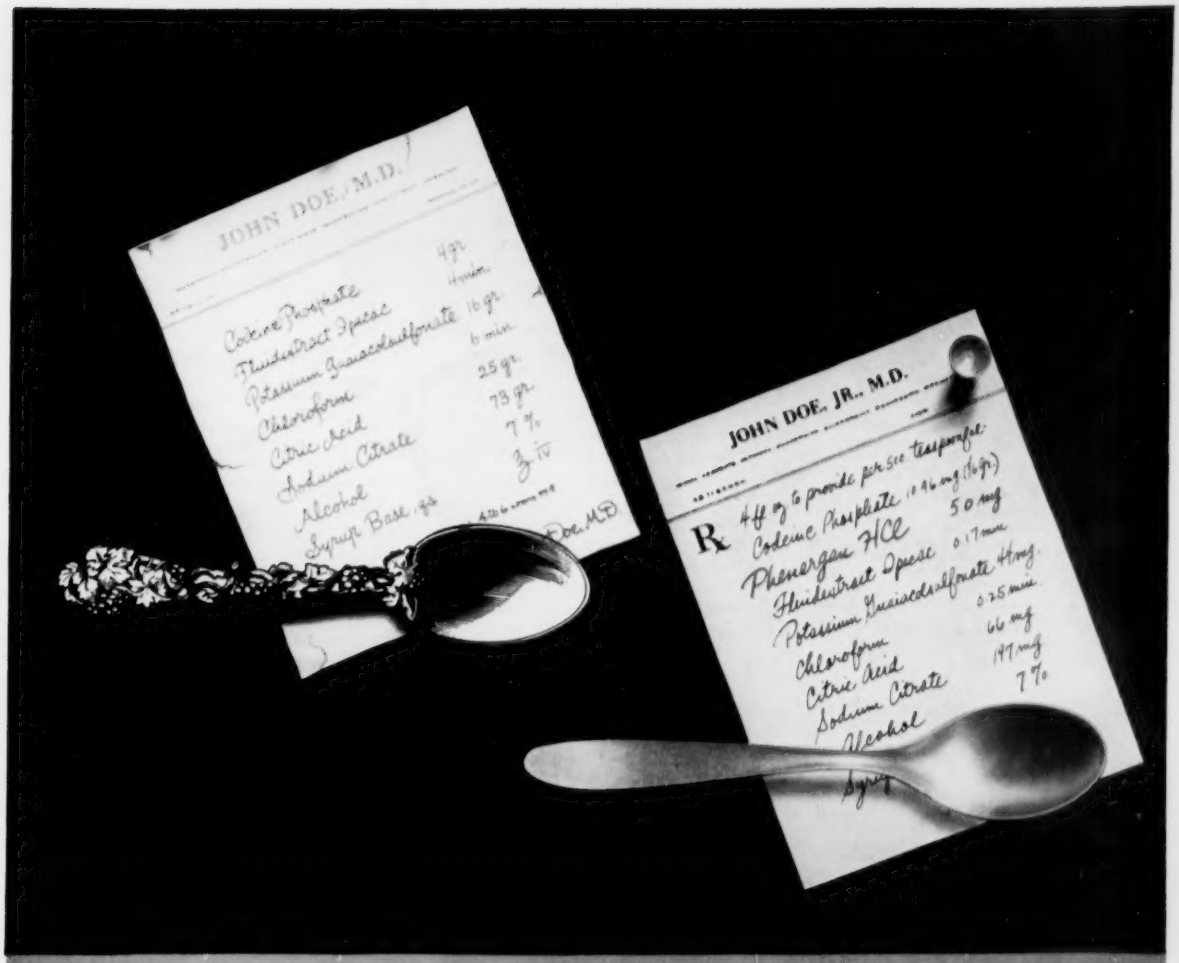

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trial Health. The major points in the program are: (1) improved communication between management, labor, and the medical profession to promote a better understanding of the objectives of constructive medicine in industry and its relation to the economics of medical care; (2) better integration between the biological, social, and physical sciences in order to understand the impact of the peacetime uses of atomic energy on future patterns of industrial production and community life; (3) study and experimentation to determine the full potential usefulness of industrial health as a major component in community health—as such it should be a more effective adjunct to private practice and the public health services; (4) better standards of administration and professional services in public agencies concerned with the health problems of workers—health departments, factory inspection, workmen's compensation, and rehabilitation; (5) better correlation between industrial research and the delineation of potential health hazards; (6) determination of ways to make careers in industrial health more attractive to essential professional and technical personnel.

INDUSTRIAL Medicine has been adopted by the American Medical Women's Association as the Program Theme for 1955-56.

INDUSTRIAL Medical Association of Philadelphia, at a meeting held at the University of Pennsylvania January 26, was told by DR. KENDALL A. ELSOM, Medical Director of the Diagnostic Clinic at University Hospital, and DR. EDWARD J. HUTH, Associate in Medicine at the University, of the results of 1000 medical examinations carried out in the Diagnostic Clinic and in a large industrial plant. Five hundred men and women were thoroughly examined at the Clinic and a similar number at the plant, and the results were practically identical. In more than one out of three persons the examination disclosed a disease or disability. Only 13% were entirely free of any defects. Over half had disorders which they knew about before the examination was made, but every other person in the group apparently neglected to seek proper treatment. Diseases of the heart and blood vessels, chiefly high blood pressure, were the conditions most commonly discovered. Among other disorders brought

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to light were diabetes, ulcers, precancerous conditions of the colon and, in several instances, early cancers which could be cured by prompt treatment. As a result of the examinations, many persons who thought they were well found that by means of a relatively minor surgical operation they could avoid serious trouble later.

A MEDICAL Advisory Committee, to give counsel to the Social Security Administration on medical aspects of administering the new "disability freeze" provision in the social security law, has been appointed, with DR. J. DUFFY HANCOCK, Professor of Clinical Surgery at the University of Louisville School of Medicine, as Chairman. The "disability freeze" provision is similar to the waiver of premium in commercial life insurance and permits a worker to keep his old-age and survivors insurance rights intact when he is totally disabled for work for an extended period. The determination as to whether a worker is totally disabled within the meaning of the law will be made by the vocational rehabilitation agency or other appropriate agency in the individual's own state under a voluntary agreement between the state and the Secretary of Health, Education, and Welfare. The Medical Advisory Committee, broadly representative of the medical profession and several related fields, will help the Bureau of Old-Age and Survivors Insurance of the Social Security Administration to set up guides and procedures for obtaining and interpreting medical evidence as to existence and extent of disability. The Committee held its first meeting in Washington, February 9 and 10. The Chairman, DR. HANCOCK, is President of the Southeastern Surgical Congress; has

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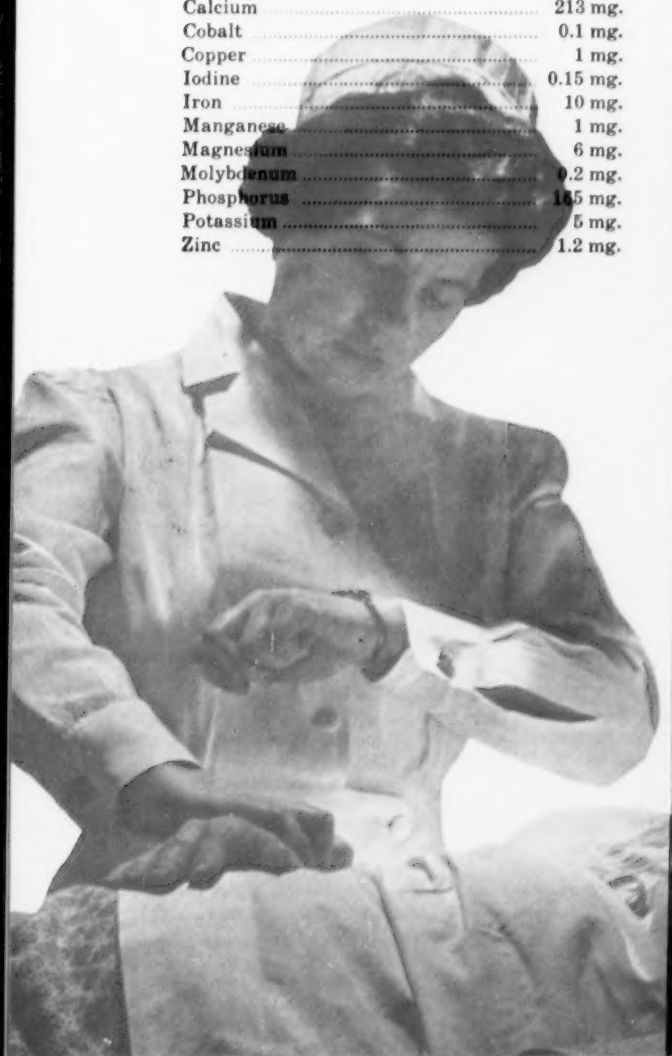

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received a number of medical awards, including the Woodstock Medal, presented to him by the University of Louisville, the E. M. Howard Medal, presented by the Kentucky State Medical Association, and the American Cancer Society Award for distinction in service; and holds the Bronze Star, the French Croix de Guerre, and other decorations for his service in Europe during World War II. The membership of the Committee includes, in addition to DR. HANCOCK: DR. ALEXANDER P. AITKEN, Clinical Professor of Orthopedic Surgery, Tufts Medical College, and Director, Liberty Mutual Rehabilitation Center, Boston; MISS PEARL BIERMAN, Consultant in Medical Social Work with the American Public Welfare Association, Chicago; DR. DONALD COVALT, Associate Professor, Department of Physical Medicine and Rehabilitation, New York University College of Medicine, New York City; DR. CHARLES L. FARRELL, of Pawtucket, Rhode Island, President-Elect, Conference of Presidents and other Officers of State Medical Associations; DR. J. S. FELTON, Associate Professor, Department of Medicine and Department of Preventive Medicine, University of Oklahoma, Oklahoma City; DR. HERMAN E. HILLEBOE, Commissioner, New York State Department of Health; DR. LEMUEL C. MCGEE, Medical Director, Hercules Powder Company, Wilmington, Delaware; DR. KENNETH E. MCINTYRE, Director, UAW-CIO Health Institute, Detroit; DR. WILLIAM A. PETTIT, State Supervising Ophthalmologist, California Department of Public Welfare at Los Angeles; DR. LEO PRICE, Director, Union Health Center, International Ladies Garment Workers Union, New York City; DR. W. H. SCOINS, Chief Medical Director, Lincoln National Life Insurance Company, and Chairman, Medical Relationships Committee, Health Insurance Council, Fort Wayne, Indiana; CARROLL SHARTLE, Ph.D., Professor of Psychology, Executive Director, Personnel Research Board, Ohio State University, Columbus; MR. BYRON SMITH, member of the Board of Trustees of the American Foundation for the Blind, a Director of National Industries for the Blind, and Executive Secretary, Minneapolis Society for the Blind; DR. DAVID WADE, Medical Consultant, Texas Division of Vocational Rehabilitation, Austin, Texas.

DON G. FOWLER, on January 25, 1955, was appointed Chief of the Industrial Hygiene Section in the Medical Department of Chrysler Corporation, of which MARION W. JOCZ, M.D., is Medical Director. MR. FOWLER has been a staff specialist with the Industrial Hygiene Section since he joined Chrysler in August, 1953. After graduating from Wayne University in 1939 with a Bachelor of Science Degree in Chemistry, he worked for Fabricon Products in River Rouge, Michigan, as a research chemist. From 1941 to 1946, he was associated with the Detroit office of the Employer's Group Insurance Company in the Department of Safety and Industrial Hygiene. He joined the Michigan Department of Health in 1947 as a District Engineer and was appointed Supervisor in 1950, serving in this capacity until he became identified with Chrysler three years later.

S. CHARLES FRANCO, M.D., Assistant Medical Director, Consolidated Edison Company of New York, speaking at the Midwinter Personnel Conference of American Management Association at Palmer House, Chicago, on February 16, 1955, described his company's program for combatting alcoholism among employees. Under the program, foremen and supervisors are responsible for recognizing the first signs of uncontrolled use of alcohol by their men. In the seven years of the program, 55% of the 290 cases uncovered have had their drinking problem under control for one to six years.

THE SUMMER SCHOOL of Alcohol Studies of the Laboratory of Applied Physiology, Yale University, will hold its Thirteenth Annual Session in 1955, during the four-week period June 27 to July 22. Since 1943, when the first session of the School was held, 1,837 students from 47 states and the District of Columbia, from nine Canadian provinces, and from 17 other countries have attended.

AT THE Eighth Annual Postgraduate Course on Diseases of the Chest, at Bellevue-Stratford Hotel, Philadelphia, March 7-11, 1955, a session on "Occupational Diseases of the Lung" has W. EDWARD CHAMBERLAIN, M.D., Professor of Radiology, Temple University School of Medicine, as Chairman; and LEON H. COLLINS, JR., M.D., speaks on "Beryllium Poisoning"; JACOB H. VASTINE, M.D., Professor of Radiology, Woman's Medical College, on "Asbestosis"; and ROSS K. CHILDERHOSE, M.D., Chairman, Commission on Tuberculosis, Medical Society of Pennsylvania, on "Silicosis."

MARION W. JOCZ, M.D., Medical Director, Chrysler Corporation, Detroit, on January 31 announced the appointment of SARAH LEE MCAVOY, R.N., as Superintendent of Nurses for the Corporation. MISS MCAVOY, who has been Assistant Superintendent of Nurses since February, 1953, succeeds MISS C. B. VARGASON who has retired. MISS MCAVOY was born in Ellsworth, Pennsylvania; graduated R. N. from St. Francis Hospital, Pittsburgh, in 1939, and for the next two years did general duty as a registered nurse. She served in the U.S. Army Nursing Corps from 1941 to 1945, as a First Lieutenant, and after her release returned to private and general nursing duties before joining Chrysler in November, 1947.

INDUSTRIAL Hygiene Foundation of America, 4400 Fifth Avenue, Pittsburgh 13, announces the availability through free distribution of two reprints, together bound, entitled "The Magnitude of Errors in Stack Dust Sampling," and "A New Method for Stack Dust Sampling," by W. C. L. HEMEON and GEORGE F. HAINES, JR. The work reported in these papers is a part of a research program on air pollution at Industrial Hygiene Foundation which has been supported by the American Iron and Steel Institute.

AMA ARCHIVES *of Otolaryngology* announces the establishment of a section devoted exclusively to Audiology. The Editor will consider for publication worthwhile articles related to any aspect of Hearing. Investigators are invited to submit articles for publication to DR. GEORGE M. COATES, Chief Editor, or DR. JOSEPH SATALOFF, Associate Editor Audiological Section.

CASE Institute of Technology, Department of Chemistry and Chemical Engineering, has "The Handling and Control of Industrial Solvents" as the subject of its 1955 Symposium on "Human Maintenance in Industry," at Cleveland, March 16-18. At the dinner on March 17, WARREN A. COOK, Associate Professor in In-

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Heat-resistant live rubber threads keep the snap in TENSOR Elastic Bandage — laundering after laundering after laundering

Here's the first elastic bandage you can put in the dryer—along with sheets and towels.

No special laundry care with new Tensor

Heat as high as 280° won't hurt it. Even in the autoclave Tensor keeps its stretch. Tensor lasts longer. Costs less to use. No wonder hospitals favor an elastic bandage made with *heat-resistant* live rubber threads. Shouldn't *your* hospital use Tensor, too? Contact your Curity man today!

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Elastic bandage made with ordinary rubber "dies" in the dryer. Loses its elasticity.

dustrial Health and Hygiene, University of Michigan, will speak on "The Economics of Solvent Control."

LEROY E. CHAPMAN, M.D., President, Association of Physicians and Surgeons, Pennsylvania Railroad, on February 12, 1955, was awarded the Honorary Degree of Doctor of Science at the University of Pennsylvania's Midyear Convocation.

EXECUTIVES of three industrial firms were named on February 17 as members of the Board of Industrial Advisers of the Occupational Health Institute: V. H. LAWRENCE, Vice-President, Jones & Laughlin Steel Corporation, Pittsburgh; JOHN POST, Manager, Industrial Relations Department, Continental Oil Company, Houston, Texas; and A. J. W. LEBIEN, Executive Director of Sales, Eli Lilly and Company, Indianapolis, Indiana.

UNIVERSITY of North Carolina School of Medicine, Liberty Mutual Insurance Company, and the Occupational Health Committee of the North Carolina Medical Society, were sponsors of an Industrial Health Seminar at University of North Carolina January 13-14. Speakers were KIEFFER DAVIS, M.D., Medical Director, Phillips Petroleum Company, Bartlesville, Oklahoma; LOGAN T. ROBERTSON, M.D., Consultant in Industrial Medicine, and Director, Occupational Health Services, Asheville; CARL M. PETERSON, M.D., Secretary, Council on Industrial Health, American Medical Association, Chicago; JOE M. BOSWORTH, M.D., Division Medical Director, Loss Prevention Department, Liberty Mutual Insurance Company, Atlanta; and A. T. MILLER, M.D., Professor of Physiology and Director, UNC Laboratory of Applied Physiology. A panel discussion on low back pain was presented by R. BEVERLY RANEY, M.D., A. PRICE HEUSNER, M.D., DEBORAH C. LEARY, M.D., and KERR L. WHITE, M.D., all of the University Medical School Faculty, with NORMAN BOYER, M.D., Medical Director, Ecusta Paper Company, Pisgah Forest, as Moderator. DR. DAVIS advised counseling, specialist care, clinics, and a close working relationship between the industrial physician, supervision, and community health divisions in discovering and caring for health problems. DR. LOGAN ROBERTSON discussed the needs for, and types of, preplacement and periodic physical examinations for employees. DR. MILLER described various methods of research being conducted on industrial fatigue.

THEODORE VAN DELLEN, M.D., played the role of the friendly family doctor to 142,143 persons all over the world last year. The Editor of *Chicago Tribune's* "How To Keep Well" column dispensed answers, advice, leaflets, humor—but no pills—in the course of handling the largest correspondence ever received in one year by the Department. Letters increased by 18,922 over 1953's volume of 123,221. Newspaper medical columns were unknown when *The Tribune* pioneered with the first in the country in 1911. Two other doctor-writers preceded DR. VAN DELLEN, who took over the column in 1945. Now the column is syndicated in 50 newspapers, including one in Puerto Rico. Questions reflect stories in the news and with every announcement of a new drug, a flood of mail follows. Heart disease is the number one subject in the doctor's mail bag. Runners-up include questions about circulation, nervous disorders, allergies, dermatology, and intestinal disorders. More women write than men, and many grade school children use DR. VAN DELLEN'S help in doing homework projects.

—*Chicago Tribune*, February 21, 1955.

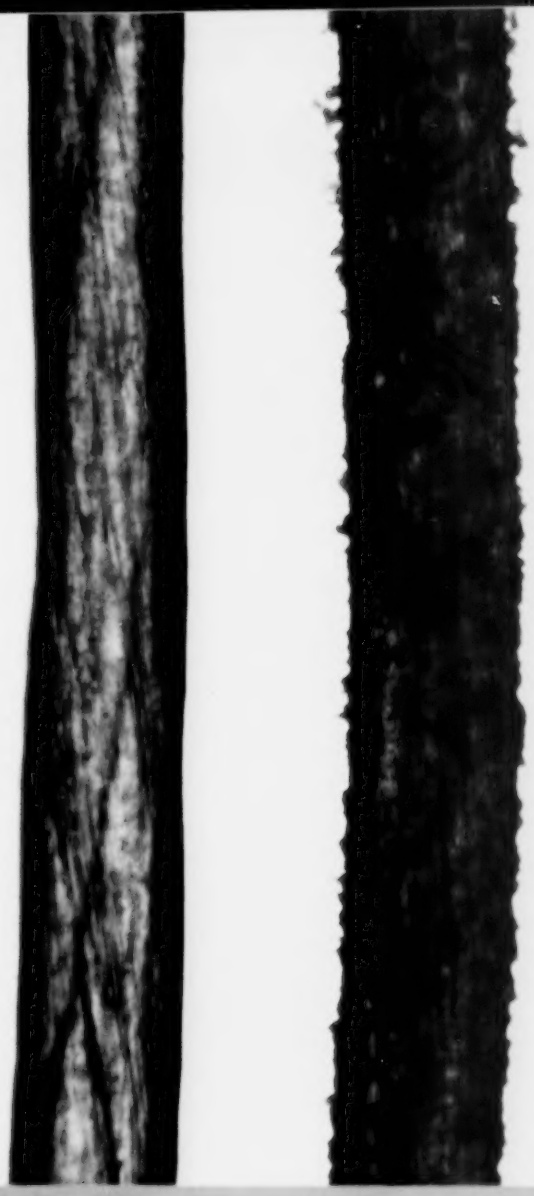
JAMES P. HUGHES, M.D., Director of the Bureau of Industrial Health in Cincinnati's Health Department, left February 1 for Columbus, where he will be Associate Professor of Preventive and Occupational Medicine at Ohio State University. DR. HUGHES, also an Assistant Professor of Preventive Medicine at the Kettering Laboratory, University of Cincinnati College of Medicine, will work in the Department of another Kettering "graduate," DR. WILLIAM ASH. DR. ASH, who was formerly Associate Professor of Preventive Medicine at the University of Cincinnati, is now Head of the Department and Professor of Preventive Medicine at Ohio State University in Columbus.

AERO MEDICAL ASSOCIATION is holding its 26th Annual Meeting at Hotel Statler, Washington, D.C., March 21-23, 1955. The program will feature some 40 presentations. Among the speakers are the following: JOHN J. WELSH, M.D., American Airlines, who will speak on "The Medical Problems of Airline Flight Personnel"; EDGAR E. POOS, M.D., of Detroit, who will speak on "Otological Problems Met in Aviators"; LOUIS F. RAYMOND, M.D., East Orange, New Jersey, who will speak on "Physiological Aspects of Binocular Vision"; and WEBB HAYMAKER, M.D., and VINCENT M. DOWNEY, Lieutenant Colonel, USAF (MC) U.S. Air Force School of Aviation Medicine, Randolph AFB, Texas, who will speak on "Fatal Decompression Sickness in Flight."

Among the speakers at the Seminar on Industrial Health held at the University of North Carolina Memorial Hospital, January 13 and 14 were (left to right): Carl Peterson, M.D., Secretary, Council on Industrial Health, American Medical Association, Chicago; Kieffer Davis, M.D., Medical Director, Phillips Petroleum Company, Bartlesville, Oklahoma; Joe M. Bosworth, M.D., Division Medical Director, Loss Prevention Department, Liberty Mutual Insurance Company, Atlanta, Georgia; Logan T. Robertson, M.D., Consultant in Industrial Medicine, Asheville, North Carolina.

Research shows why D & G gut is stronger

PHOTOMICROGRAPHY SEES WHAT THE HAND CANNOT FEEL



D & G gut

Photomicrograph **shows the smooth surface of D & G SURGICAL GUT, with practically no fraying or roughness.** ***Reason:*** **Carefully controlled slitting of plies plus uniform twisting provides a smooth, well-bonded strand. No need to grind it to size. Gentle polishing gave the matte finish.** ***Result:*** **the full natural strength of each gut ribbon (ply) is preserved; the strand is not frayed by grinding.**

Another leading gut

Photomicrograph **reveals rough, frayed surface of another leading brand of gut. This has been ground to size. Gut processed in this way appears very uniform in diameter to the naked eye. But the photomicroscope reveals serious imperfections which may cause fraying and loss of strength when the knot is tied.**

see exhibit on next page

Photomicrographs (unretouched) by E. J. Thomas, Stamford Laboratory of the Research Division of the American Cyanamid Company, Stamford, Conn.

Method used: dark field, transmitted bright field illumination, 138 x.
Material used: medium chromic gut, size 5-0.

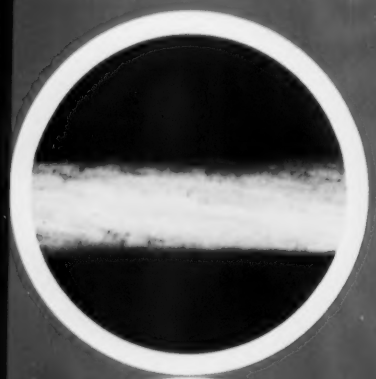
SUTURES AND OTHER D&G SURGICAL SPECIALTIES

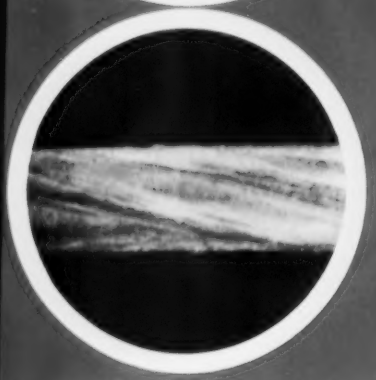
DAVIS & GECK INC.

A UNIT OF AMERICAN Cyanamid COMPANY

DANBURY, CONNECTICUT

Photomicrography shows why D & G gut is more flexible





D & G GUT

Firm, even cohesion of plies is apparent in this photomicrograph of a D & G SURGICAL GUT suture. **Reason:** plies were twisted into a strand before suture was chromicized. Natural cohesive forces of moist untreated collagen firmly bond the plies together and hold the twist. **Result:** under stress, plies of the suture hold together. The D & G gut is more flexible and knot strength is greater.

ANOTHER LEADING GUT

Photomicrograph detects separate and distinct plies in a strand of another leading brand of surgical gut. Here each ply was chromicized before they were twisted into suture strands. Such "ribbon chromicizing" hardens the surface of each ply, decreasing the natural bonding action, lowering the flexibility and tensile strength of the suture.

Photomicrographs (unretouched) by E. J. Thomas, Stamford Laboratory of the Research Division of the American Cyanamid Company, Stamford, Conn.

Method used: dark field, reflected illumination, focus on crest of surface, 38 x. Material used: medium chromic gut, size 00.

see exhibit on previous page

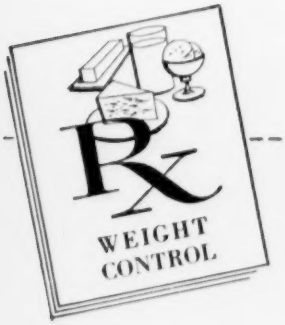
SUTURES AND OTHER SURGICAL SPECIALTIES

DAVIS & GECK INC

A UNIT OF AMERICAN Cyanamid COMPANY

DANBURY, CONNECTICUT

mirror, mirror, on the wall...



Overweight can be a physical, social, and economic handicap . . . an unnecessary handicap which can be eliminated by intelligent choice of food and moderate exercise.

Medically supervised research on weight reduction shows active, overweight adults losing 1½ to 2 pounds per week on a diet of appetizing meals featuring a variety of foods which provide all nutrient needs except calories—and which also satisfy hunger. Persons on such diets maintained pep and sense of well-being, reported no hunger pangs . . . but shed excess pounds!

These diets contain approximately equal weights of protein, fat, and carbohydrate. Fat combined with protein in a meal delays hunger—for it reduces stomach motility and gastric juice secretion, promotes slower digestion, and makes possible a more gradual absorption of nutrients.

Foods included in these diets provide all essential nutrients in amounts recommended for adults. Only calories are in deficit. Dairy foods are an important feature of these meals because of their high proportion of nutrients in relation to the calories they provide. Their taste appeal and variety make the diet easy to follow until desired weight is lost.

Doctors! Send for the convenient leaflet and diet instruction sheets containing menus for three full meals a day for an entire week. Diets at two moderately low calorie levels are included. These diet instructions will be useful even where a person may require a different calorie level for weight loss. For such individuals, the physician can suggest desired modification, retaining the basic diet plan.

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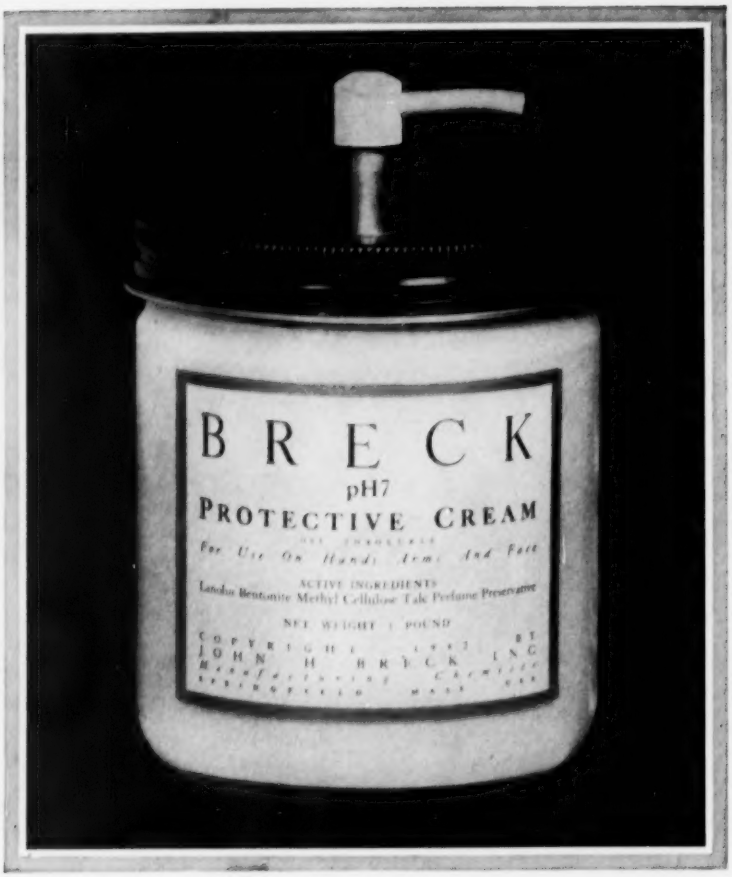

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150,000 units Penicillin G Procaine

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how many of your patients are eskimos?

Unless you are one of the handful of physicians in the Far North, you'll see an Eskimo only in adventure movies. In a way, it might be a welcome relief to examine a nose hardly ever affected by infectious and/or allergic conditions.

Of course, the estimated 3 out of every 5 patients here in the U. S. suffering from such conditions represent a continuing, and sometimes exasperating, problem.

Now, for these patients, here is a new preparation, effective in 5 out of 6 cases* of

upper respiratory tract involvements

. . . infectious and allergic

. . . seasonal and perennial

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Administration: *Adults*—Two or three sprays in each nostril, 4 or 5 times a day as needed, or as directed by physician.

Children—One or two sprays in each nostril, 4 or 5 times a day as needed, or as directed by physician.

*(Response in 254 of 302 patients[1-5])

1. Busis, S. N., and Friedman, L. L.: Antibiotics & Chemotherapy 3:299, 1953. 2. Lazar, A. M., and Goldin, M.: Eye, Ear, Nose & Throat Monthly 32:512, 1953. 3. Cohen, B. M., and Mendelsohn, P.: Laryngoscope 63:1118, 1953. 4. Wittich, F. W.: Ann. Allergy 12:185, 1954. 5. Vickers, M. A.: Laryngoscope 64:632, 1954.

mucolytic
penetrating

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antibacterial • antiallergic • decongestant **nasal spray**

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nonsensitizing . . . rapid acting . . . topical anesthetic

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a new form of the widely accepted Xylocaine Hydrochloride solution

- Xylocaine Ointment provides unusually rapid, and deeply penetrating anesthesia without the drawback of toxicity, sensitization or irritation. Xylocaine is unique in this respect.

- For use in the control of itching, burning and other dermatologic distress. May also be applied liberally on skin and accessible mucous membranes to prevent pain during examination or instrumentation.

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Xylocaine Ointment is now made available at the request of many physicians, surgeons, and anesthetists who routinely use Xylocaine Solution.

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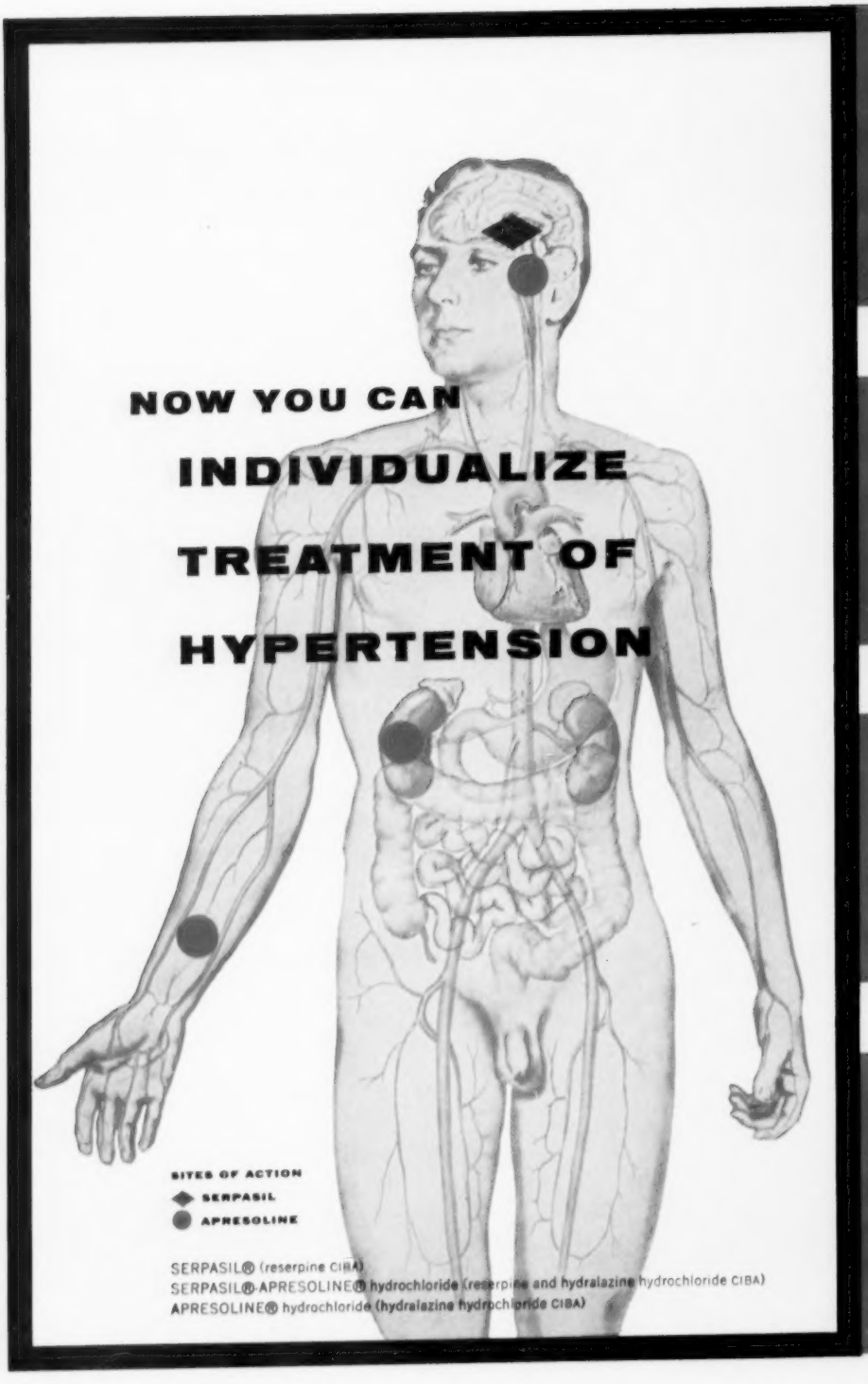
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INDIVIDUALIZE
TREATMENT OF
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SITES OF ACTION
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SERPASIL® (reserpine CIBA)
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For initial therapy—in all cases:

SERPASIL, a pure crystalline alkaloid of rauwolfia root—particularly effective in the neurogenic forms of hypertension. *Acts centrally*—tranquilizes, moderately lowers blood pressure, slows heart rate.

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When combination therapy is indicated:

SERPASIL-APRESOLINE, a combination product offering convenience and economy in the more complicated cases involving both neurogenic and humoral factors.

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APRESOLINE *acts centrally and peripherally* for a marked antihypertensive effect. Increases renal plasma flow—produces vasodilatation—inhibits pressor substances.

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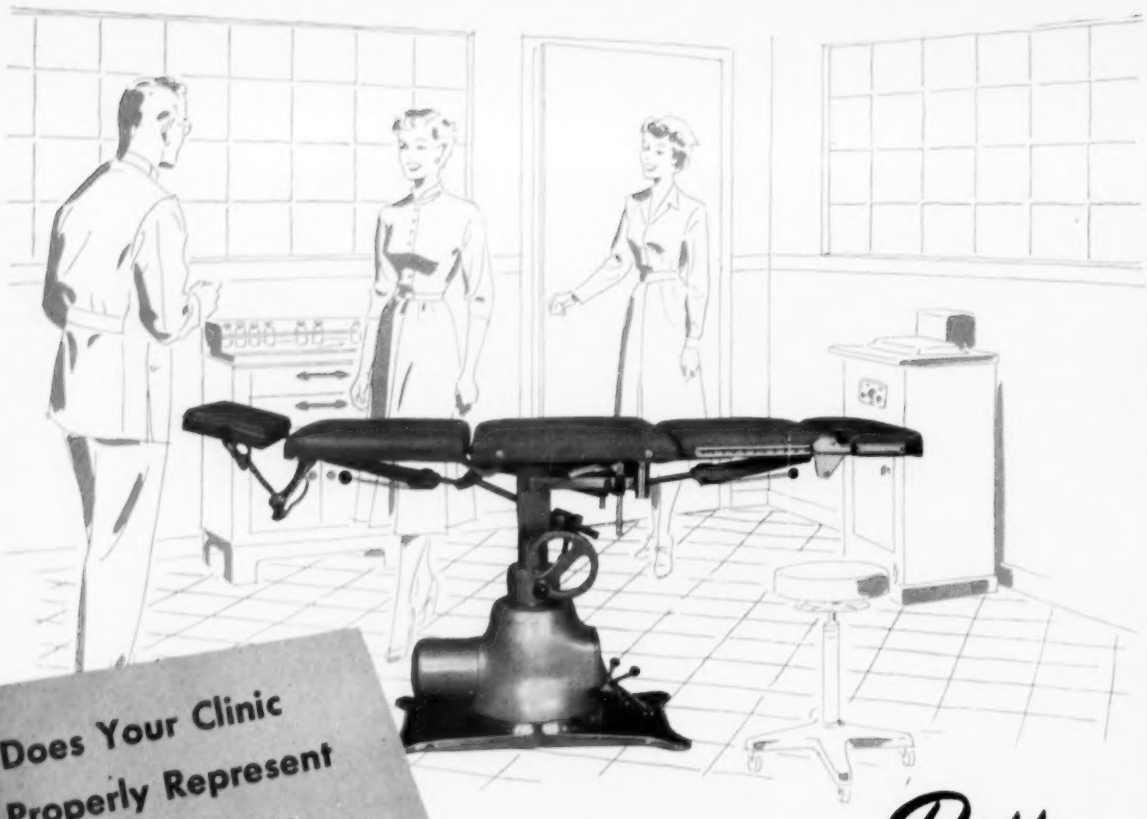
Serpasil	Tablets, 0.1 mg., 0.25 mg. and 1.0 mg. Parenteral Solution (for neuropsychiatric use only), 2.5 mg. per ml., in 2-ml. ampuls. Elixir, 0.2 mg. per 4-ml. teaspoonful.
Serpasil-Apresoline	Tablets, each containing 0.1 mg. of Serpasil and 25 mg. of Apresoline. Tablets, each containing 0.2 mg. of Serpasil and 50 mg. of Apresoline.
Apresoline	Tablets, 10 mg., 25 mg., 50 mg. and 100 mg. Ampuls, 1 ml., 20 mg. per ml.

CIBA
SUMMIT, N. J.



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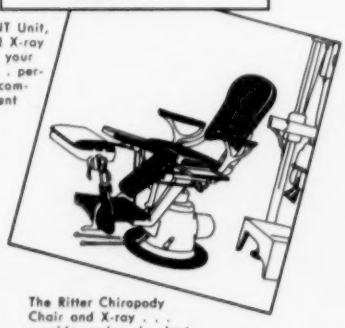

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in THE COMMON COLD
Physiologically acceptable Neo-Synephrine hydrochloride solution promptly constricts the engorged nasal capillaries which are responsible for nasal congestion in the common cold. When the nasal mucosa is reduced to its normal state, the nasal passages resume their proper patency, drainage is possible, and the patient can again breathe freely.
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Both discovered by Pfizer *world's largest producer of antibiotics*

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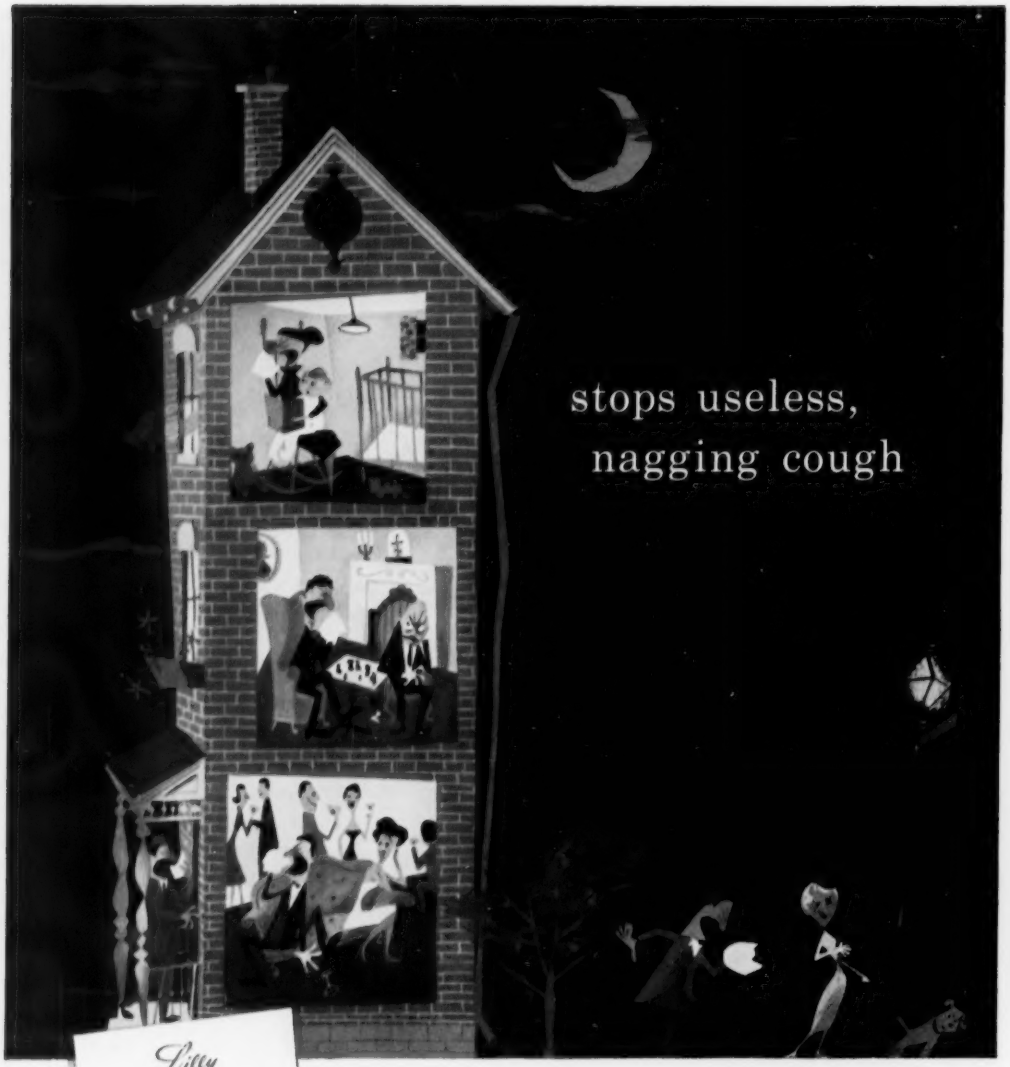

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Thenylpyramine Fumarate	13.5 mg.
Codeine Phosphate	1/6 gr.
Ammonium Chloride	1 2/5 grs.
Ephedrine Hydrochloride	1/12 gr.

Here is an effective cough mixture that combines the therapeutic virtues of an antihistaminic, a bronchial sedative, an expectorant, and a bronchodilator. This pleasantly flavored, bright-red-colored antitussive appeals to all. Prescribe it routinely for uncomplicated coughs.

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INDUSTRIAL MEDICINE AND SURGERY

MARCH, 1955

Chlorinated Insecticides: Toxicity for Man

LEMUEL C. McGEE, M.D., Wilmington, Delaware

MAN'S ceaseless war against his potent enemies of the bacterial, viral, and insect world is marked by formidable vexations. He finds repeatedly that specificity of action is a chimera, that his best weapons may be met by successful adaptation on the part of these enemies. He is forced to employ the weapons in a manner calculated to avoid their being turned against him in the struggle of all species to survive. He must employ his wits continuously in order to maintain or better his position relative to other forms of life.

Insecticides of a variety and effectiveness hitherto unavailable have been devised and applied by man during the past decade. In one group of these chemicals are chlorine-containing organic compounds which have distinguished themselves not alone for toxicity to numerous insect species but also for their similarity of chief effect in mammals (central nervous system stimulants—hence "convulsant poisons"). Chlorophenothane (1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane; also called dichlorodiphenyltrichloroethane or Gesarol), better known as DDT, has led the field in use and has served as a prototype for the chlorinated pesticides.

It is estimated that insects cause a yearly loss in agriculture in the United States of four billion dollars and that one dollar spent on well-selected and properly applied insecticides returns 52 dollars in increased food production. Ten percent of the total food crop in this country during growth and an additional 5% during storage are lost to insects.[1,2]

Such major diseases of man as malaria, plague, and epidemic typhus have been controlled dramatically by destruction of the insect vectors through the use of insecticides. About 124 million people are estimated to have been protected against malaria during a recent year through assistance from our government's Foreign Operation Administration (this agency supplying more than 20 million pounds of DDT 75% water dispersable powder).[1]

Simmons[3] has said, "The array of effective new chemicals for the control of zoological vectors and reservoirs of human disease has been one of the most spectacular developments of the past decade. There is no question but that the phenomenal growth in the use of economic poisons has saved millions from the ravages of malaria, typhus, plague, dysentery, and certain other diseases of zoological origin, and has enabled the world to produce more food than otherwise would have been possible."

This is not the place to document the accomplishments of insecticides. Their usefulness is well established. It is necessary, however, that any consideration of the toxicity of insecticides for man be clearly set in the framework of gains in the form of human lives protected from illness and death due to infectious disease and starvation. As an analogy it should be noted that Jenner's vaccination method against smallpox earned its place in our society on the obvious basis of the many men, women, and children saved from smallpox, not on the basis of occasional illness from generalized vaccinia, secondary infection, or infrequent death due to encephalitis following vaccination. The latter complication has been reported to occur somewhat more frequently than once in 100,000 vaccinations.[4] Reported illness due to an idiosyncrasy and frank poisoning by accidental ingestion of chlorinated insecticides, in relation to the widespread contact from the use of the materials, are less frequent by comparison.

The chlorinated hydrocarbon group of insecticides are similar in the following properties: (a) solubility in fats and common organic solvents; insolubility in water; (b) relative chemical stability; (c) similarity as convulsant poisons in warm-blooded animals.[5] (It should be noted here that methoxychlor (1,1,1-trichloro-2,2-bis(p-methoxyphenyl)ethane) has no demonstrable effect on the central nervous system unless it is given concurrently with carbon tetrachloride.[6] Its toxicity for most mammals is comparatively low; large doses produce liver necrosis, continued feeding yields loss of weight through voluntary reduction in food intake by the experimental animals).[5,7,8] Appreciable variation has been found in the tendency of these insecticides to be retained in fat storage in animals. The experimental examination of this question of storage, as summarized by Patterson and Lehman,[9] indicates that the insecticides which are capable of

being metabolized at a relatively rapid rate are not stored to any appreciable extent. Toxaphene and methoxychlor would fall into this class. Actually, storage of some toxaphene and methoxychlor, or chlorinated metabolites thereof, can be demonstrated by feeding experiments.[7] The rate of deposition of these materials is so much lower than for other chlorinated insecticides, however, that this factor is reassuring in connection with pesticide contamination of cattle fodder and residues on food offered for human consumption.

The following represents an effort to colligate existing information on manifestations of toxicity to man of chlorophenothane, benzene hexachloride, chlordan, aldrin, dieldrin, and toxaphene.

Chlorophenothane (DDT)

THE toxicology of DDT has received more attention in the laboratory than have its congeners. There have been also more clinical reports of poisoning and suspected poisoning in man by this material than for other chlorinated hydrocarbon insecticides. An evaluation of many of these reports is handicapped by inadequate information regarding the cases. Whereas reports of untoward reactions to drugs are usually accompanied by details as to dose and time and method of administration, such details are characteristically lacking in the circumstances of accidental poisoning. Drug reactions occur under semi-controlled conditions, often with the subject under observation in a hospital, wherein one has some knowledge of other factors which may have produced the observed reaction or modified its character. The pharmacologic effects of a convulsive dose of a chlorinated insecticide are dramatic, are usually associated with a mistake made by someone, and the stress of the event makes for inaccurate reporting on the part of those in a position to observe.

For the protection of the public much publicity has been given to "potential hazards" of pesticides. Two results of this publicity have been those which regularly are associated with an educational effort, be it on anything from the effects of atomic energy to the need for early diagnosis of cancer—to wit, frequent anxiety states and a plethora of "false-positive" diagnoses.

Certain reports of human poisoning by DDT are clear-cut in the expected relationship between cause and effect. Others deserve serious consideration by virtue of possible hypersensitivity or species variation underlying unexpected effects. Many case histories are complicated by the presence of several poisons, the influence of a vehicle, or a pre-existing disease in the patient. Finally, there are reports which can be interpreted only as uncritical diagnostic guesses appearing as symptoms of our widespread professional malady known as *cacoethes scribendi*. That disease states of unknown cause have been offered refuge under the mask of "DDT poisoning" through wishful thinking is implied in some publications.

The summary of those instances of purported DDT poisoning which came to the attention of Francone, Mariani, and Demarc[10,11] prior to 1952 presents the confusion created by the above variables. These authors found a total of 384 cases: 66 from agricultural work, 12 from industry, and 305 from miscellaneous domestic use (including accidental and intentional ingestion). The various syndromes proposed by Francone and his associates in the attempt to find some order in the heterogeneity of signs and symptoms are not adequately supported by experimental work in other species or by observations made on human volunteer subjects exposed to DDT under controlled conditions. Vague somatic aches and pains, mild respiratory symptoms, and dyspepsia result from too many causes to be trustworthy diagnostic guides.

Acute DDT Poisoning

ACUTE poisoning in man is that expected from the observation of such poisoning in laboratory animals. An early symptom is paresthesia of the lips, tongue, and face. Later dizziness and weakness are noted. There is apt to be numbness, tingling, and hyperesthesia in the extremities. Tremors about eyelids and face spread to the trunk and extremities; nausea and vomiting may or may not occur. This prodrome is followed (within an hour if the dose is sufficiently large and rapidly absorbed—as from a digestible oil) by a tonic and then a clonic convulsion of a few minutes duration. A period of relaxation with prostration and labored breathing is followed by another convulsion. The cycle repeats itself (a few times only in large doses) until death, recovery, or control by anesthesia or sedation occurs.

The mechanism of action of the chlorinated insecticides at the cellular level is unknown. Neal and von Oettingen[12] a decade ago reported that "even in fatal acute or often in chronic poisoning the pathologic changes found are not sufficiently marked to account for death, and it appears, therefore, that the mechanism of action of DDT is essentially of functional character. This is also brought out by the observation that animals may recover even from severe DDT poisoning without any observable untoward effects" (i.e., residual effects). Some observers have suggested that the acute neurologic symptoms and signs can be explained in part by the hypothesis of disturbed cerebellar function.[13,14] Pollock and Wang[15] using the electroencephalograph on cats fed DDT found that 30% CO_2 increased the "amplitude of cerebellar activity although electrical fits were not observed." This potentiating effect of CO_2 with DDT is "in contrast to the antagonistic actions of CO_2 on seizures induced electrically or with metrazol."

Johnson[16] found that DDT and several related compounds had an inhibitory effect, *in vitro*, on succinoxidase from heart muscle of the rat. A similar effect occurred on cytochrome oxidase.

Several workers have been unable to find consistent histologic alterations in the central nervous system (brain or spinal cord) even after maintaining pronounced neurological symptoms (daily convulsive doses of DDT) in several

species of animals. Globus in 1948 summarized his work and that of others in this direction.[17]

Velbinger[13,18] made one of the early reports on DDT poisoning. He referred to Mülhen's case in 1946 wherein a soldier ingested 3 to 4.5 gm. of DDT in powder form. One hour later the subject vomited, subsequently complained of headache and "irritability," felt well by the following day. In human volunteers, including himself, Velbinger found that 250 to 500 mg. of DDT in cod liver oil gave barely detectable hyperesthesia of lips. Doses of 750 to 1000 mg. gave in addition appreciable prickling sensations in the skin of the face and tongue within two hours. Reflexes in the extremities and abdominal muscles were brisk. There was hesitation in the finger to nose test, a headache, a feeling of irritability, weariness, and a disturbance in equilibrium. Ten hours after the larger dose there was vomiting and tremor of the hand with occasional carpal spasm. After 1500 mg. of DDT the symptoms were similar and somewhat more marked.

Twenty-five Army personnel in Australia were affected mildly after eating pastry made with DDT as a substitute for baking powder in 1946.[19] All suffered from "a feeling of giddiness and weakness, commencing one to two and one-half hours after the meal." The two men most severely affected were "confused," staggered, had "blurred and thick" speech, and complained of weakness with "pins and needles" in hands and arms. Muscle tremors and convulsions were not seen. All recovered within 48 hours.

DDT powder added to flour in making bread led to illness in 28 Formosan prisoners of war. Garrett[20] reported the symptoms, beginning 30 to 60 minutes after eating the biscuits, as "severe episodes of vomiting and a gradual numbing and weakening of the extremities." Twenty of the patients "showed a look of apprehension . . . . a wild, excited look. Several exhibited a mild clonic, convulsive state." All had weakness of fingers and hands. There were hyperactive knee jerks in eight patients. There were no changes in blood counts, no diarrhea, no blood in stools or urine. Six patients had a pulse rate of less than 48 per minute. There were no deaths in this group. Three patients complained of weakness in the extremities for five weeks. Most of the patients were well within 48 hours.

Mass poisoning occurring in 1946 was reported from France in 1949. Thirty-seven women became ill after eating tarts covered with a sauce made of flour which had been contaminated with an insect powder.[21] The flour used was found to contain about 9% DDT. No estimate could be made of the amount eaten by the diners. Their symptoms were vomiting, abdominal pain, and diarrhea, "prickling" and cold sensations in hands and fingers, headache, and malaise. All women recovered without muscle tremors, convulsions, or paralyses. Stool specimens were said to contain no Salmonella or other microorganism which could be considered responsible for acute gastrointestinal symptoms.

A 17 year old girl (weight not given) was said to have taken 10 grams of DDT emulsified in water.[22] An hour later she described a colicky-type epigastric pain, had nausea, faintness, and was unable to stand. She did not vomit and received medical attention three hours after taking the pesticide. There was described a sense of dead weight and paresthesia in the feet. There were no convulsions; tactile, thermal, and pain sense was impaired in the face, legs, feet, and anterior aspect of arms and forearms for several days. A tremor of the fingers was noted on the fifth day, becoming worse for a few days. The lower extremities had diminished strength. By the seventh week there was atrophy of the peroneal muscles and persisting leg weakness with a "steppage" gait. Subsequently there was a gradual recovery.

A recent report of intoxication concerned a Formosan family who ate DDT-contaminated pork dumplings.[23] The contamination came from the accidental use of 50% wettable DDT powder in cooking. Eight of the 11 members of the family had symptoms of illness, beginning two to six hours after the meal. These symptoms were excessive perspiration, nausea, vomiting, convulsions, headache, increased salivation, tremors, accelerated heart beat, and cyanosis of the lips. All recovered within 48 hours after the appearance of the symptoms. Calculations of the amount of DDT probably consumed indicated the largest dose as 120 mg. DDT per kilogram of body weight. A 23 year old pregnant female who ate 10 mg. per kilogram had no symptoms. A 20 year old male ill with an "infection" at the time, had sweating, headache, and nausea following an estimated dose of only 6 mg. per kilogram of body weight.

DDT Effects on Skin

WITH the extensive exposure of the human skin to DDT in some form during the past decade, it is not surprising that a few validated instances of sensitization (contact type) dermatitis have been found. Leider[24] was the first to report an instance of dermatitis supported by adequate evidence. He obtained strongly positive patch tests on the skin of his patient by the application of 5% DDT in acetone and of technical DDT powder. Acetone alone and other test materials used for comparison gave no reaction. He further demonstrated the rarity of such a sensitivity by finding no skin reactions to patch tests with DDT in acetone in 50 unselected subjects.

Higgins and Kindel[25] found an instance of exfoliative contact dermatitis following the use of DDT spray mixture. DDT and two analogues showed positive skin tests whereas "contactants" encountered in the patient's work and 13 compounds somewhat structurally related to DDT were negative. Two months after this patient's recovery his skin still reacted to 2,2 bis-(p-chlorophenyl)-1,1,1-tri-bromoethane but not to pure crystalline DDT.

Hollander[26] saw a 64 year old man with an "angry" dermatitis on the face, neck, chest, upper abdomen, and flexor surface of the arms, accom-

panied by intolerable itching, burning, and pain which followed exposure to DDT. Soon after the lesions cleared, an intensely positive patch test was obtained by applying 5% DDT in acetone. Hollander observed, "the paucity of true instances of DDT-caused dermatitis is worthy of especial comment." Other reports of acute dermatitis following exposure to some form of DDT and with positive skin patch tests in the patient are those of Kresbach[27] and Niedelman.[28]

Marshall's[29] patient developed a purpuric rash following use of 10% DDT in kerosene. He also had scabies; his skin was found to be sensitive to sulfathiazole as well as DDT (powder or solution) application.

DDT Poisoning Complicated by Other Factors

IN NUMEROUS reports the symptoms and findings are affected, at least in part, by a solvent. The first reported instance of death in man thought to be due to DDT seems to be that of Hill and Robinson.[30] The accidental ingestion by a 19 month old child was of about one ounce of a 5% DDT in kerosene. The authors gave kerosene alone and kerosene with DDT to baboons in an attempt to differentiate between effects of the solvent and effects of the insecticide. The animal receiving 30 cc. of kerosene alone survived; that receiving the same amount with 5% DDT died following convulsions. The insecticide could have played a role since it is estimated that the child obtained 150 mg. DDT per kilogram of body weight. However, since the child died of acute pulmonary edema with hemorrhage and the stomach contents had no odor of kerosene, the likelihood of aspiration of the solvent into the lungs is apparent.

Biden-Steele and Stuckey[31] in 1946 reported the findings at autopsy on a man believed to have taken a large yet unknown amount of DDT concentrated emulsion in methylcyclohexanone as chiefly those of pulmonary congestion and edema, congestion of the stomach and intestinal mucosa. The victim was found dead—there was no knowledge of agonal signs and symptoms.

The 58 year old man who died following drinking an insecticide solution reported by Smith[32] likewise showed symptoms and autopsy findings suggesting the influence of kerosene as a cause of death. The presence of Lethane (n-butyl Carbitol thiocyanate) in the ingested material further complicates an interpretation of the cause of death.

A two year old child seen by Cunningham and Hill[33] drank an unknown quantity of 5% DDT in kerosene. Convulsions did not occur until four days later. These continued to recur, except when controlled by barbiturates, for three weeks. Another unexpected finding, that of deafness for several weeks, is not one heretofore reported as a possible DDT effect.

Bierring's[34] patient had skin exposure to a DDT spray. He washed himself with gasoline (type not specified) and showed symptoms two days later of vomiting, dizziness, and nervousness; a tremor of the hands lasted three weeks.

Some degree of exposure to DDT has preceded the recognition of certain obscure diseases in man. These diseases have been associated both in the pre- and post-DDT period with multiple possible causal agents and are characterized by an unfortunate lack of scientific knowledge. What relationship, if indeed one exists, between these diseases and an idiosyncrasy to DDT in the rare human being so affected is currently sheer guesswork. In any event the association has been reported for periarteritis nodosa,[35] thrombocytopenic purpura,[36] subcutaneous adiponecrosis,[37] obscure neurologic, hepatic, and myocardial changes,[38,39] and agranulocytosis.[40,41]

Is There Chronic DDT Poisoning?

EFFORTS to produce chronic poisoning in animals have succeeded only to the extent of producing (a) recurring acute manifestations if the daily dose of DDT is sufficiently large, and (b) parenchymal tissue changes, chiefly liver, which are compatible with life if the animal is not killed in a convulsive seizure and which are generally reversed when DDT feeding is discontinued. It is therefore not surprising that an acceptable clinical picture of chronic poisoning in man has not been established during or following prolonged exposure, even in those unnecessary and excessive exposures which prudence cannot condone.[42] The nearest approach to a possible chronic DDT effect is seen in the few reported instances of peripheral neuro-muscular dysfunction (weakness and paresthesias of extremities, rarely muscle atrophy) following severe acute poisoning in man and persisting for some weeks or months.[21,23,38] The mechanism of this functional disorder, if it is a DDT effect, remains to be elucidated.

This reviewer must agree with a statement made in 1953:[43] "There are no confirmed cases of chronic DDT poisoning and confirmed cases of acute poisoning are invariably associated with eating of a relatively large quantity of DDT."

Angley[44] examined 31 enlisted men who had sprayed 5% DDT in kerosene inside buildings an average of six hours a day for six days per week for one to 20 weeks. There was no skin irritation or loss of weight. He found no symptoms referable to the nervous system or urinary tract. Electrocardiograms and hematologic findings were unchanged. Altered liver function tests were found only in that proportion of men expected to have such changes (comparable to the incidence in the military personnel in the area, largely due to infectious hepatitis).

Hertel's[45] case of a 60 year old man involved exposure to DDT dusting powder for three years. The victim had an extensive pyoderma and lymphatic tuberculosis which makes it impossible to decide what, if any, role in causing death is to be assigned to DDT. Hertel's finding of "DDT-active substance" in tissues viewed with a polarized microscope together with insecticidal activity in organ extracts is beside the point. The storage of DDT and its metabolite DDE (1,1-dichloro-2,2-bis(p-chlorophenyl)ethylene) in adi-

pose tissue is a well-verified fact.[42] Furthermore, tissue extracts of untreated animals have some insecticidal properties, which activity is enhanced if stored chlorinated insecticide in treated animals is taken up by the extraction procedure. The perplexity of this finding lies in the fact that the animals (including man by fat biopsy)[46] having such material in their fat are ostensibly healthy. One is reminded of the similar situation with lead. Normal adults with no known special exposure to lead are found to have in their bodies 100 to 300 mg. of lead.[47]

Isomers of BHC

BENZENE Hexachloride (BHC, Hexachlorocyclohexane, if the Gamma Isomer—Lindane or Gammexan): Four investigated isomers of BHC vary in their lethal dose, in tendency to storage in fat, and in apparent effect on the central nervous system. The gamma isomer is the most toxic to warm blooded animals (also the most effective as a pesticide), acting to increase the irritability of the central nervous system and possibly affecting to some extent the peripheral neurone.[48,49] Herken[49,50] found BHC isomers to have an inhibitory effect on metrazol-, picrotoxin-, and electroshock-produced convulsions in rats.

Poisoning by BHC

A FIVE year old girl took by accident 45 grams of a 30% solution of BHC in an unspecified organic solvent.[51] The clinical findings were those of shortness of breath, cyanosis, vomiting, tonic-clonic convulsions, and signs of heart failure; the "post-mortem examination disclosed pulmonary edema, dilatation of the heart, fatty infiltration of the liver, and extensive necrosis of blood vessels in the lungs, kidneys, and brain."

Kwoczek gave in abstract a case reported to him by Gädeke wherein BHC in a solvent was taken internally.[52] A five year old girl of 25 kg. weight drank 15 cc. of 30% BHC solution. In a short time the child had respiratory difficulty, cyanosis, tonic and clonic spasms, and vomited. She died three hours after drinking the material. The findings post-mortem were pulmonary edema, dilatation of the heart, fatty change in the liver, and endothelial necrosis of small blood vessels in lungs, kidneys, and brain.

Danopoulos and his associates[51] saw five patients in 1951 with obscure illness following an ill-defined exposure (possible absorption through lungs and skin) to mixed isomers of BHC in a 40% powder formulation. The complaints were of "lassitude, weakness, stomatitis, intestinal colic, and diarrhea," developing gradually. "Four patients showed mental confusion with delirium and choreic and athetotic movements." Tendon reflexes were increased. One patient died following repeated clonic and tonic convulsions for a day. Variables in the clinical picture were thought by the authors to be due to the prolonged exposure (one month) with gradual accumulation in the body, especially of the beta isomer of BHC. Electrocardiographic changes suggested damage to the cardiac muscle. Atrophy of the optic nerve appeared in one patient. All patients had anemia and accelerated erythrocyte sedimentation rates. The five patients came from a group of 79 reputedly affected persons, 18 seriously, with six deaths. In view of numerous other similar exposures to BHC without such findings, and the atypical, slowly developing symptoms that these patients presented, the report is at best a questionable example of pesticide poisoning.

Graeve and Herrnring[53] had six patients to develop symptoms of mild poisoning (one had a generalized convulsion) while taking orally 45 mg. of Gammexan in an emulsion, three times daily for three days, as a vermifuge (for oxyuriasis).

Baumgartner[54] in 1953 reported four instances of dermatitis in workers handling BHC. (Two additional cases had been seen by the time the proof of the paper reached the author.) Skin patch tests of BHC were stated to have been positive. Six to 14 days after exposure to BHC the subjects complained of itching and burning of eyes which was followed by eczematous lesions on fingers, back of hands, forearms, neck, and face. Recovery after removal from exposure required eight to 14 days.

Reiches[55] found two patients who developed a papulovesicular eruption on the arms, legs, and shoulders 24 hours after the application of Kwell ointment (0.5% gamma benzene hexachloride in a vanishing cream base) for the treatment of scabies. Halpern and his associates[56] found no untoward reactions using Kwell ointment while treating 300 patients with scabies. Patch tests on 200 subjects showed neither irritation nor sensitization from contact with the gamma isomer of BHC.

Motta's[57] report concerned a 19 year old woman with skin contact to a 5% BHC powder. The exposure seems inadequate and the symptoms not characteristic of poisoning by this insecticide.

Chlordan

AMBROSE and associates[58] pointed out that technical chlordan (Octa-klor, Velsicol 1068) is not a pure entity. It is composed of alpha and beta chlordan (1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindan), Heptachlor, Trichloro 237, and related compounds.

Barnes[5] in 1953 found only one human death ascribed to chlordan. A young woman in a formulating plant spilled "well over 100 ml. of concentrate on her dress. She died within 40 minutes, before receiving any medical attention."

Lensky and Evans[59] had a wholly typical instance of poisoning by chlordan in a 15 month old child weighing 9 kilograms. She recovered from taking an oral dose of less than 100 mg./kg. in the form of an aqueous suspension of chlordan wettable powder. Her symptoms were tremor and ataxia progressing to convulsions, risus sardonicus, and opisthotonus. There were generalized hyperactive reflexes between convulsions.

The patient of Lemmon and Pierce[60] appears to have suffered from hepatic disease associated with alcoholism rather than chlordan poisoning.

The patient's exposure was probably insufficient, the symptoms not those of acute chlordan poisoning.[61]

Heyroth noted that, like other insecticides of the chlorinated hydrocarbon type, "chlordan produces signs of irritation of the central nervous system such as hyperexcitability, tremors, and convulsions as its most characteristic manifestations."[61]

Workers exposed to chlordan during its manufacture received an examination which included chest x-ray, bromsulfalein excretion and thymol turbidity tests of liver function, hemoglobin measurement, serum bilirubin estimation, and erythrocyte sedimentation rate. There was neither clinical nor laboratory evidence of disease in these workers.[62]

Chlordan in human skin patch testing studies has been found to be "a compound of low sensitivity index . . . The dermatitis which may result from this commercial use would be suspected to be due more to the kerosene vehicle than to the material itself."[63]

Aldrin and Dieldrin

THESE highly chlorinated naphthalenes are effective economic poisons. They are nervous system stimulants causing irritability, hyperexcitability, and convulsions in laboratory animals. By prolonged feeding tests storage in animal fat has been demonstrated.[64,65]

Aldrin is a chlorinated dimenthanonaphthalene (1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-1,4,5,8-dimethanonaphthalene). Barnes[5] stated: "Among factory workers there have been a number of cases of poisoning in men handling the powder. Several had convulsions but all recovered within a week."

Spiotta[66,67] observed the clinical course of a 23 year old white male who drank six ounces of a solution containing 1.8 grams of aldrin (an intake of 25.6 mg. aldrin per kilogram of body weight). Twenty minutes later the victim had a generalized convulsion lasting about 60 seconds. His stomach was lavaged with magnesium sulfate solution; he received barbiturates, morphine, and atropine sulfate intramuscularly. There were two more convulsions before sedation was effective. The following day the patient passed grossly bloody urine. On the third day the blood nonprotein nitrogen rose to 81 mg. per 100 milliliters and gradually returned to normal during the next two weeks. There were no localizing neurological signs, the only evidence of liver damage (or hemolysis?) was an icterus index of 15 on the third day. The electrocardiogram was normal.

Electroencephalograms on this patient taken 18 days after drinking aldrin showed alterations which cleared gradually over the next three months. The patient had amnesia for the poisoning episode. Subsequent psychological and psychiatric testing suggested an essentially normal individual with no behavior "generally considered to be correlated with brain damage."[67]

Nelson[68] described three men having convulsions, among 30 workers in a formulating plant. Their exposure was to 25% aldrin concentrate and 2.5% aldrin, DDT, and sulfur. Other complaints in these subjects were nausea, vomiting, vertigo, loss of weight, headache, and malaise. In two patients an electroencephalogram "showed evidence of a cortical disturbance which appeared maximal over the left temporal area." With limitation of exposure to dust in the work place all symptoms in the workers ceased. There was no evidence of chronic poisoning or other continuing illness.

Fowler[69] found a tractor driver complaining of headache, nausea, burning of the skin, and jitteriness following a spill wherein his face, arms, and legs were thoroughly saturated with aldrin. He recovered within 48 hours. Fowler observed two other cotton field workers whose skin irritation "may have resulted from dieldrin concentrate." Dieldrin is the name for the insecticidal product containing not less than 85% of 1,2,3, 4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4(and 5,8)-dimethanonaphthalene. The basis for Fowler's report was his excellent clinical investigation of the status of men, women, and children exposed to these and other insecticides in the Mississippi Delta region. He concludes ". . . . no evidence could be found that pesticides were the direct or indirect cause of any chronic disease, nor a contributing cause in diseases generally recognized as having other etiologies. . . . The problem is one of acute intoxication due to excessive exposure resulting from carelessness and or the lack of knowledge."

Hayes and his associates[65] found no injury to workers engaged in field trials with dieldrin.

Princi and Spurbeck[70] performed careful clinical examinations (including urine porphyrins and special attention to neurologic signs) on 34 workers engaged in the manufacture of chlordan, aldrin, and dieldrin. These men were exposed to atmospheric concentrations of insecticide (calculated as aldrin) varying from 9 to 50 milligrams per cubic meter. The examinations and laboratory tests gave no evidence of a deleterious effect in these workers.

Toxaphene

WHEN camphene is chlorinated to 68% by weight in chlorine ($C_{10}H_{10}Cl_8$) it forms an amber, waxy solid with a faint pleasant terpene odor. The material, known as toxaphene, is tasteless and not appreciably irritating to mucous membranes. Its structural formula is unknown. Its stability, solubility, and effect on the central nervous system of insects and animals is similar to that of other insecticides in the chlorinated group. Toxaphene is less readily stored in fat tissue than is DDT.[9]

Toxaphene poisoning in various animal species is manifested by diffuse stimulation of the cerebrospinal axis resulting in generalized convulsions. If the dose is lethal, death is due to anoxia and respiratory failure after a series of convulsions of increasing severity. The minimal lethal dose for man is unknown. Episodes of accidental poisoning have not given sufficient information

regarding the amount of toxaphene ingested by the victims to furnish a guide to the minimal lethal dose. It is worthy of note that there may be little or no gastrointestinal disturbance from ingestion of toxaphene by man.

McGee, Reed, and Fleming[71] as of 1952 had found three instances of death in children where the evidence strongly suggested accidental toxaphene ingestion as the cause. A fourth child so poisoned recovered. Group poisoning from eating toxaphene-contaminated green vegetables was apparently the cause of illness affecting seven persons in two families. All of these patients recovered.

Subsequently two other instances of accidental ingestion of toxaphene by human beings have come to the writer's attention. A 16 month old child was allowed to play with a can containing a concentrate of toxaphene. The child's mother later found a "thick, molasses-like substance on the child's face and hands."[72] Thirty minutes after this discovery "the child was limp and turning blue." Convulsions began shortly thereafter and recurred until death ensued three and a half hours later, apparently from exhaustion of the respiratory center.

A 15 year old, husky farm lad attempted to siphon a solution of toxaphene from a barrel. The siphon-starting maneuver used was that widely popular one of applying suction by mouth. The boy swallowed an unknown quantity of the solution. His mother insisted upon feeding him raw eggs and milk and induced vomiting shortly after the accident (much against the boy's will; he felt fine at that point!). Three hours later he had a generalized convulsion. Before reaching the hospital and receiving intravenous pentothal (a total period of six hours after starting the siphon) the patient suffered an estimated 15 generalized epileptiform convulsions. He was kept under sedation for some 16 hours. Recovery thereafter was uneventful. There were no manifestations of epilepsy or other convulsive disorders in the boy before or after this accidental illness.

Exposure of Workers

THOSE who have followed toxicologic investigations on chlorinated insecticides have been impressed with the observation that reasonably severe exposures to such materials by inhalation (in both animals and men) have been accompanied by manifestations of toxicity of the solvent (e.g., kerosene) or of the local irritation of a dust but not by evidence of an effect from absorption of the insecticide. It has been established that the large absorptive surface of the lung is not reached to any great extent unless the inhaled particulate matter be of highly respirable size, i.e., one to five millimicrons, or in the form of a non-irritating (respirable) gas or vapor. Yet this admirable protective mechanism against inhalation of air contaminants would seem to be insufficient under excessive exposure to the clouds of dust in which some compounders and applicators work for long periods of time with complete disregard of reasonable recommendations devised to avoid or minimize exposure. Repeated instances of inordinate exposure have been investigated during the past several years without finding symptoms in the workers which could be attributed to the chlorinated pesticide involved.

Evidence that human exposure to highly concentrated dusts can lead to clinically significant combined pulmonary and skin absorption of chlorinated insecticides came to the author's attention in the summer of 1954. A mixture of chlorinated materials in 40% concentration with sulfur, kieselguhr, Attaclay, and talc was involved. The workers had much of the neck and chest as well as all extremities exposed. No masks were worn; there was no ventilation other than by air currents through doors and windows of the work shed. Laborers mixed the material on the floor by means of shovels, wading in 40% chlorinated insecticide dust up to their knees. After it was mixed by shovel the material was passed through a hammer mill for grinding and then bagged in the same room. The workers were in this dense cloud of dust on a schedule of eight hours on and eight hours off in a continuous operation for a period of 88 hours in order to fill an emergency order. (It should be pointed out that this operation did not occur on this continent.) The work room temperature reached as high as 113° F during the middle of the working days. The two teams of workers consisted of six men each. A thirteenth man was concerned with weighing batches and was reported to have been present part of the time on all shifts.

Fatigue and irritation of the eyes (effect of sulfur?) were the only symptoms noted until the afternoon of the fourth day when three workers suddenly developed generalized convulsions within a short period of time. All workers were then sent to a hospital for medical examination. At the hospital, without warning signs or symptoms, two additional workers had generalized tremors and a short period of coma. The five workers so affected recovered rapidly and were released from the hospital after 60 hours. No sequelae have been reported in these men after several month's follow-up. It seems quite likely that absorption of the chlorinated insecticides (pulmonary, skin, and to some extent by the gastrointestinal tract) was the cause of the acute illnesses. This event adds weight to the recommendations for limiting exposure of such workers by sensible operating practices.

The potential hazard of applications to the skin of animals of unsuitable concentrations of these materials is pointed up in a report by Ely, *et al*,[73] wherein five calves and a bull died in violent convulsions following their spraying, for control of external parasites, with 0.3% lindane (0.03 to 0.06% is the recommended concentration for this use). These animals presumably obtained a great part of their lethal dose through licking their hides.

Summary

IN RARE instances human poisoning by chlorinated insecticides has resulted from accidents or

suicidal intent. The manifestations of such poisoning are acute and sufficiently dramatic to make the diagnosis obvious. The number of reported cases is remarkably small in view of the widespread use of insecticides and the human element of carelessness and disregard for the hazard of accidental poisoning.

Treatment involves prompt removal of unabsorbed pesticide from the stomach or from the skin and control of the convulsions by adequate sedation (intravenous barbiturates). Recovery from poisoning, in the well-documented reports, has been prompt and has not been followed by any characteristic sequelae. No validated "chronic poisoning" type of illness has been recognized by the majority of physicians who have searched for that possibility.

The chlorinated insecticides are skin sensitizers of a low order of frequency. The actual relationship, if any does exist, of these materials to bone marrow hypoplasia, collagen disease, and other poorly understood human ailments is unknown.

(Hercules Powder Company.)

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George H. Gehrmann and Psychiatry in Industry

George H. Gehrmann, M.D., retired on October 1, 1954, as Medical Director of E. I. du Pont de Nemours & Company, to act as Associate Medical Director. Dr. Gehrmann's retirement reminds us that he initiated the first continuing full-time psychiatric program in the manufacturing industry in the United States. He made psychiatry an integral part of the outstanding preventive medical program he had developed over 39 years of service in the industrial field. By establishing psychiatrists in the line organization of the company, he insured technological continuity for the eventual development of a sound, realistic, psychiatric preventive program. He put psychiatry on the front line in industry several years before the armed forces did so in Korea. Dr. Gehrmann readily agrees that the program, now more than 10 years old, is far from perfect, but the fact remains that it has gained enough company acceptance to insure further opportunities for growth. To accomplish this, the program began with diagnosis of the company's health promoting practices. The discipline inherent in occupational therapy was highly developed. It was a psychiatric tool, already accepted by many psychiatrists and industrial physicians. As expected, management's resistance to further refinement was minimal. Results were observed and evaluated by many members of the organization. The program was therefore focused on the effective application of discipline to behavior during working hours, always with prevention in view. One result has been increasing participation by company physicians. Allan J. Fleming, M.D., who succeeded Dr. Gehrmann as Medical Director encourages this. At one of the first weekly staff meetings, following his promotion, he designated psychiatric conditions as the greatest problem in prevention now facing industrial medicine. He requested continued medical support for the psychiatric program. He also indicated clearly the responsibility of the company psychiatrists to develop a realistic program of prevention, comparable with other highly successful medical and safety programs already maintained and supported by industry. Dr. Gehrmann won support from those in top positions of authority by the measurable teamwork accomplishments of himself and those under his direction. By bringing management increasingly into the program, he established a realistic, ever-broadening interdisciplinary approach to the problems of preventive psychiatry as he had already done in other branches of medicine. He established policies for the humane effective management of those employees who develop mental ills, including alcoholism. His example has had effects far beyond the company. A few other companies have employed psychiatrists. Others have set up standards for psychiatry and are seeking psychiatrists who will accept and attempt to meet the established requirements of full-time, ethical industrial medicine. His accomplishments constitute a milestone in the progress of psychiatry in industry. The program he initiated insures, in at least one company, technological continuity and healthy growth.

—From "Psychiatry in Industry," by F. W. Dershimer, M.D., Wilmington, Delaware, in *Am. J. Psychiatry*, 3:7 (January) 1955.

Occupational Health on the Farm —A Symposium

AMONG the presentations at the Postgraduate Course in Industrial and Occupational Medicine given by the University of Kansas Medical Center, December 6-8, 1954, were several devoted to industrial medicine in the field of agriculture. Of this group, the four formal papers are here reproduced in their entirety and six others in summary.

The General Practitioner and Medical Services for Farms and Small Industries

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WITH 2000 full-time industrial physicians operating large-scale programs of industrial health and hygiene in our major industries, it is apparent that the state of industrial health in the large plants of this country has reached a high peak of efficiency and, for the time-being, has leveled off. The area of future growth of industrial medicine and future improvement of industrial health is in the small plants where 95% of the employers and 60% of the workers of this country are to be found. In spite of all the industrial health development, it is estimated by the Public Health Service that 40% of this country's workers are offered no industrial health service of any kind.

There can be no question that employee health services are badly needed in the small industrial plants. Compensation laws require even the smallest of them to have some sort of medical arrangement for handling their industrial medical disabilities. Many methods have been utilized, and often satisfactorily, in setting up small plant medical service. Typical of the plans being used by small industrial plants to provide adequate medical care is the so-called Hartford Plan which services eight companies with a total of 3500 to 4000 employees. This is based on the use of one nurse for each company and one full-time physician who visits each plant daily. Each plant pays a proportionate share of the physician's salary and the salary for one nurse.

Another successful method of providing adequate medical service to smaller companies is illustrated by the Northwest Industrial Clinic in Minneapolis. Using a complete three-story building, strategically located for convenience to as many of the plants to be serviced as possible, a group of physicians offers complete industrial medical service to a large number of small industries. This group has been in existence for nine years, and now has plans for further expansion, which, however, do not contemplate any in-plant service. It must be remembered that Minnesota has, in addition to 10,000 lakes, more than 5000 industrial plants, most of which are located in the Twin Cities. A number of medical plans would be applicable there.

Consolidated plans such as these do not answer the problem of medical care to small industries in isolated communities with less than 100 employees. Sending the injured or sick to the nearest doctor has proved neither economical nor the best of medical care in many instances.

Making necessary examinations or treating occasional accident cases puts the doctor in the salvage department of industry, and not in the production line where the industrial physician belongs. To keep adequate records, manage health and safety problems, and represent the company with state and local health officers requires a minimum of three hours per week of a doctor's time for a company with 100 employees. A plant of 2000 employees requires a full-time doctor with a minimum of nine hours of nursing per week for each 100 workers.

Four specifications should be agreed to between the doctor and the company before the position of plant physician is considered:

1. Confidential doctor-patient relationships must be respected without reservations.
2. All medical records must be kept locked up.
3. Reports must be made only in an ethical manner.
4. The doctor will be the Director of his department—tolerating no interference.

The major part of the need for medical care in small plants must be met by the part-time service of the general practitioner. He is the only available qualified person to meet this need, and it is vital that he meet it ably and with a knowledge of industrial medical practice.

Four essential requirements are common to all successful small plant programs:

1. The primary aim must be to benefit the employees, although management also benefits.
2. The program must have management-labor interest and support.
3. The medical personnel must be interested and competent in developing an effective industrial health program.
4. THE MEDICAL SERVICE MUST COME INTO THE PLANT.

WHAT are the differences between the private practice of medicine and industrial medicine? Simmons lists the most important differences as:

1. The emphasis in general practice outside industry is largely curative—healing the sick; industry considers curative medicine as only 10% of industrial practice and calls it the negative approach to health. In industry the emphasis should be on preventive medicine—keeping people well. In industrial medicine 90% of the care is preventive and constructive—the positive approach to health.

2. The industrial physician, in addition to routine medical examinations and treatment, must also know and understand each patient's job, as the diagnosis and treatment may be dependent on the work being done by the patient.

One industrialist has stated, "Until such time as the medical thinking of physicians becomes geared to believing in the positive or preventive concept, the practice of constructive medicine will have to be carried by a relatively few enthusiastic industrial and public health physicians."

This differentiation might be questioned. The industrial physician is aware of particular etiological factors present in the plant; the general practitioner associates outbreaks of certain seasonal dermatological conditions with such things as ivy exposure and epidemics of acute diarrhea in families with recent picking of peaches or ripening of roasting ears.

Having accepted the necessity for the small town general practitioner to devote at least part time to the industries operating in his community, the activities and duties involved should be explored. It must be premised that employers and employees in small plants have every right to expect the same high calibre of services that exists in the full-time occupational health departments of larger industrial organizations. Obviously the extent of services rendered may vary widely depending upon numerous variables, including the number of employees, the geographical location, and the industrial hazards.

The value of these services is almost unbelievable. In a National Association of Manufacturers' report from 1900 companies employing fewer than 250 employees each, it was found that accidents dropped 39%, occupational disease was reduced 41%, compensation insurance premiums were reduced 24% (for management), and employee turnover rates were reduced 25% when an adequate medical service program was utilized. Other surveys have been equally encouraging.

The medical services which attract the most attention in either large or small plants include:

1. In-plant medical care.
2. Pre-employment and periodical physical examinations.
3. Rehabilitation.
4. Medication for non-industrial illness.
5. Industrial hygiene in plant with recommendations for improvement.
6. Adequate records kept for analysis.
7. Administration of sickness insurance benefits.
8. Study of absences due to sickness.

With the exception of the first service there is nothing foreign to the daily routine of the general practitioner. Looking at the in-plant service as a collective house call makes this also a natural function of the general practitioner.

A well-rounded industrial health program calls for regular hours of service within the plant by a qualified physician. This is a universal "must." The in-plant call provides the doctor with an opportunity to meet the workers, observe the environment in which they work, the sanitation, and the preventive measures used, and offers the employees an opportunity to see and consult the plant doctor and plant nurse. One hour a day, or more, as may be needed, with an actual interest evidenced in the plant management and employees will soon make any general practitioner a part-time industrial physician fully qualified to offer needed medical services.

To the employees, establishment of in-plant health services means a positive effort to protect and improve their individual health with all the benefits thereof.

To management, the establishment of in-plant service represents a concrete demonstration of the recognition of the need for healthy, strong and willing workers, with all the benefits of increased production that accrues therefrom.

And to the community physician this may represent the first sustained opportunity to practice preventive medicine in the adult population, to help place workers in positions where each may make his greatest contribution, to detect accident proneness and disease early, and to guide those who may need medical attention to the most appropriate treatment facilities. Often it affords his first interesting experience in keeping workers well and happy on the job.

New York State, in contemplating the employment of a full-time executive for its Committee on Industrial Health, says "Aside from early detection of occupational disease, prevention of injury to workmen, emergency care of injuries, and what every good practitioner ought to know, there are certain specific categories of knowledge involved: air pollution, illumination and vision in relation to occupation, effects of industrial noise and impaired hearing, occupational dermatoses, the older worker in the aging population, occupational cancer, employment of the physically handicapped, rehabilitation not covered by industrial compensation, periodical health examinations and health education with job placement recommendations requiring knowledge of all in-plant conditions."

Small communities with industrial plants having no medical programs have always sent the accident cases to a local physician who treated them in his office or sent them to the hospital. Why, then, the insistence on in-plant medical care now? Emergency treatment of industrial injuries once accounted for most of the effort in the field of industrial medicine. This caused most of the hostility directed toward industrial medicine and industrial physicians at that time. This

hostility has largely disappeared as the emergency treatment of industrial injuries faded into a position of lesser importance.

The advent of preventive medical and accident prevention programs in large industrial plants has developed safety, industrial hygiene, and preventive engineering to a high level of performance. This has changed the whole picture in industry until many plants have become safer than the home, the field, or the highway.

Dr. William A. Sawyer, for many years Medical Director for the Eastman Kodak Company, described the ideal situation as one in which, "the plant physician and nurse know the plant, its machines, its environment, the character of the jobs, and the men and women who work there."

Note the similarity here to the daily practice of the general practitioner. He is already a part-time internist, a part-time surgeon, a part-time pediatrician, and a part-time obstetrician. As a part-time industrial physician he will acquire as much competence in this field within a reasonable period as he has in the others.

TO STAY within the scope of the subject, farming must be included. Farming is an industry, a small industry, with new tools, new methods and new machines, some of which contribute too high a proportion of severe industrial accidents, occupational dermatoses, and an inviting field of rehabilitation. Owing to the size of the average American farm, the seasonal variation in the number of employees, and the distances between the farm plants, a medical program *per se*, appears difficult to organize, and as such has not received much attention in current literature.

In Hawaii the Territorial Association of Plantation Physicians has developed the plantation system, known in American medicine as a unique system of private practice combined with industrial medicine. The plantation doctors, organized primarily to give medical service to the rural workers of Hawaii, are now an integral part of the Industrial Medical Association. Although some of the methods used in Hawaii might be objectionable in the states, it cannot be overlooked that in 1923 the morbidity and mortality records in the Islands were worse than those in the states, and in 1949 the health records in the same Islands compared favorably with the best in the states. Community hospitals are now used to replace the luxury of maintaining a private plantation hospital system. Anyone interested in group hospital and medical care for the rural population could profit by a study of the general practitioner-industrial surgeon development in the Hawaiian Islands in the past 30 years, not overlooking the fact that American farmers and plantation laborers will not approach the problem of medical care from the same starting point.

It seems apparent that some of the modern safety engineering know-how could, and should, be applied to, let us say, cutting down the accident factor in tractor manipulation. At present, farm bureaus, public health associations, or other health groups, could profitably investigate many of the farm dermatoses, the seasonal diarrheas with the possibility of a relationship to the prevalent practice of spraying, and the increasing incidence of sickness during silo filling.

An analysis of days lost by farmers on account of occupational illness and injuries is a challenge to all farm groups. Industry has accepted a similar challenge in industrial plants, with remunerative and encouraging results. Owing to the seasonal peak load in farming, equivalent employee days lost are often more costly than the loss in a machine shop. This is thrown out as a problem for which the solution has not yet been, but can be, found.

THE question arises as to why the general practitioner does not just take industrial medicine in his stride as another of his many activities. There has been a lack of information on the purpose and proper scope of an industrial medical program, as well as a misunderstanding between private and industrial physicians. This, according to Luongo, was engendered by a feeling that industrial physicians engaged in "contract medicine," a term which does not convey the stigma it did a quarter-century ago. A large segment of the medical profession feared industrial medicine would make inroads on the family physician, and disturb the physician-patient relationship by the injection of a third party or middle-man. These fears, to a large extent, have disappeared, and the medical profession recognizes the increasing importance of medicine in industry. There is actually no real distinction between private and industrial practice. A survey made a few years ago showed that 94% of general practitioners do industrial practice to a certain extent.

Every physician practicing medicine treats industrial cases almost daily. Every physician, whether in private or industrial practice, must apply the principles of occupational medicine. Private patients are subject to occupational hazards in the kitchen, the yard, and on the highways which may lead to disabilities that affect the efficient performance of household, office or farm duties.

There should be no arbitrary division of responsibility for an individual's health and welfare when eight hours are spent in the plant and 16 in the home with an intimate dovetailing between the two.

The suppressed hostilities, frustrations, and anxieties developed during working hours are not left with a change of clothing at the plant. They are carried home to become the etiological factor in many cases of migraine, cardiospasm, vomiting and other psychosomatic manifestations evidenced by the wife, who has probably never been inside the plant. Here, again, the logical doctor to treat both is the family physician, who sees and treats the man and his wife as individuals, and who is familiar with the environment of both.

The next best solution to this problem would

be an understanding between the family physician and the industrial physician, both working toward a common goal with benefits from such teamwork accruing to the individual worker, the employer, and the community, including the medical profession. Whatever benefits of preventive medicine, as applied to industry, are to be enjoyed by the nation's workers will reach them only through the interest of private practitioners who have equipped themselves for effective service in industry. The physician who treats a number of farmer patients with similar skin disturbances during crop spraying or dusting seasons has no reluctance in contacting the local farm agent to ascertain the toxicity of the spray or dust being used. This is in-plant service.

The physician in small shoe and clothing plants, who treats an unusual number of workers with similar skin eruptions, visits the plant to determine the etiological factor which is causing the dermatitis. This interest shown by the plant physician is not overlooked by either the worker or the employer, and forms an important cog in that much sought patient-physician relationship.

Occupational disease diagnosis requires some knowledge of the health hazards associated with a particular work environment. The general practitioner is not expected to be trained in the various ramifications of industrial hygiene and engineering, nor to be able to use the various collecting and sampling devices employed in evaluating the concentration of dusts, vapors, and gases. Neither is he expected to do mitral commissurotomies, enucleate brain tumors or do lobectomies.

A plant visit, once or at regular intervals, provides an intelligent physician with insight into the actual working conditions in which the patients are placed, and serves to assist in evaluating the influence of the job on health and disability in the same manner that indications for consultations in other fields are determined by history, x-ray, ECG, or other laboratory findings. It is interesting to note that senior medical students in the University of Wisconsin's Department of Preventive Medicine and Student Health spend three and a half days in an industrial plant that has a functioning health program. With the plant physician, the students discuss and observe the handling of occupational hazards, industrial poisons, safety programs, noise control, sanitation, personnel problems, job placements for the handicapped, care of common injuries, and similar problems.

Summary

DIRECTLY or indirectly, much of today's medical practice touches upon industry—servicing industrial firms, attending employees, applying to general practice some of the findings of industrial medicine.

The small plant medical problems can be met by enlargement of the scope of private practice to fill the preventive and treatment needs of employers and employees. This will require an interested curiosity by practitioners, and improved cooperation with public and private health agencies. A more honest financial return to physicians in the service of industry will go far to win friends and create a climate for growth.

Four conditions must be borne in mind:

1. General practitioners are the only available source for industrial service in small towns.

2. The plant must educate the physician with regard to industrial health needs and methods.

3. The lack of interest shown by the general practitioner in preventive and therapeutic services for industry must be overcome.

4. The lingering attitude among some physicians that industrial service is not as noble, worthy, or ethical as other forms of medical practice must be corrected.

Career men have proved the worth of occupational medicine in the large plants. As a result, the small company wants an in-plant medical program, too, but it cannot afford the elaborate set-up of the large plant. The alternative is part-time medical service, and that is where the general practitioner enters the field and fills a void which no one else is available for and qualified to fill.

Organization and Administration of Medical Services for Farm Cooperatives

WILLIAM J. SHAW, M.D.

DESPITE the fact that membership in farm cooperatives reached a record high of 7,400,000 in 1951-52 with 10,142 separate organizations, an increase of 92 groups, or 4%, in one year, there is a marked paucity of health services reported by these groups. The National Council of Farm Cooperatives, Washington, D.C., recently stated, "We have no material on the extent of medical coverage for farmer cooperatives. Our organization is composed entirely of farmer groups engaged in the marketing of agricultural commodities or the purchasing of farm supplies."

In June, 1954, Dr. Frederick Mott, organizer of the prepayment program for farmers under the old Farm Security Administration and now in charge of the United Mine Workers hospital program, summarized his ideas of the problem and its solution by the statement:

"The solution is organization of consumers (meaning patients) so that they will have the resources for judging whether the care is good or bad. The challenge is to build programs which offer every participant the fullest possible opportunity to achieve and maintain optimal physical and mental health—some form of group practice prepayment is essential. This is the foundation which must support the structure. Cooperative democratic action gives it form and integrity, but high quality medical care is the keystone."

THE historical background of prepaid medical service is illuminating. As early as 1880 hospital service insurance plans were in operation

in northern Minnesota. These were originally developed for the benefit of lumberjacks. The earliest voluntary plan for prepaid medical care was established in 1882 by the Northern Pacific Railroad Benefit Association. It is still in successful operation.

Workmen's compensation laws have been passed since 1911, when this maneuver was initiated by the State of Washington, to cover the more hazardous industries. Oregon, in 1917, passed a medical aid act which provided that both employer and employee contribute equally to medical care costs. This resulted in hospital and private clinics agreeing to furnish the services under contract. Soon these services were expanded to include all medical and surgical care, with later inclusion of dependents as entitled to the same benefits.

In 1929 the school teachers in Dallas, Texas, organized a plan with Baylor University Hospital for medical—including hospital—services. Later the plan was expanded to include others besides school teachers. That was the earliest prototype of present plans.

About 1930 hospital administrators were confronted with the serious problem of patients unable to pay for hospital accommodations, resulting in increased operating deficits for the hospitals. Individual hospitals began forming hospital service associations to spread the cost of hospital service among large groups of subscribers, and relieve individual patients of excessive demands in case of catastrophic illness. While the early contracts made it imperative that the patient utilize the hospital in which he held membership, reciprocity arrangements between hospitals were soon initiated. The American Hospital Association approved the plan, and it became known as the "Blue Cross."

The success of the Blue Cross gave impetus to the state medical societies to experiment with similar plans for easing the burden of medical care. In 1934 the House of Delegates of the AMA promulgated 10 principles for the guidance of medical societies entering this field. The California Physicians' and the Michigan Medical Service began operation in 1931 and 1940, and by 1946 there were 51 plans in operation. The AMA Council on Medical Service and Public Relations included a special Division on Prepayment Plans.

The acceptance of these plans by organized medicine was complete in 1945 when the House of Delegates of the AMA passed the following resolution: "The Board of Trustees and the Council on Medical Service will proceed as promptly as possible with the development of a specific national health program with emphasis on the nation-wide organization of locally administered prepayment medical plans sponsored by medical societies."

CONSUMER cooperative groups have organized prepayment plans in many areas. Wide expansion, however, did not come until the 1930's.

In 1946 a conference of cooperative and consumer-sponsored health service plans was held, and a national organization formed: the Cooperative Health Federation of America. By 1949 the AMA had records of 79 consumer-sponsored plans in 27 states. These were supported by labor unions, by workers in specific industries, and by farm organizations. The enrollment of 48 of these plans totalled 674,653, of which 245,770 were rural. It was estimated at that time, that the 79 groups covered roughly 1,106,000 people, of whom less than one-third were rural.

Although it is acknowledged that coverage of rural workers represents one of the big gaps in present occupational health programs, not enough has been done to fill this void. It should not be necessary to call attention to the high accident rate in farm workers. According to the National Safety Council, occupational accidents for 1953 resulted in fatalities for 26 per 100,000 workers in all industries, and 59 per 100,000 in agriculture.

Industrial medical activity has been concerned with determining the toxicity of the newer insecticides, developing preventive measures, and disseminating this information to the rural population. Little, if anything, has been done to bring to this rural group the benefits of industrial medicine in its fullest sense.

With this sketchy history of the attempted development of medical service for farm cooperatives it is pertinent to see how many were organized, what proportion of those organized remained active, and the cause for discontinuance of those no longer in operation.

A diligent effort has been made to ascertain the exact number of farmer cooperative medical services now in operation, but the effort did not reveal the answer. Particular efforts to find the results of the 52 Texas cooperatives in 1950 was non-productive of definite results although quotations from a letter received from one well-informed rural practitioner in Texas may give an inkling:

"Interest in cooperative hospitals was high after the State Medical Assembly of Texas was forced to recognize and approve cooperative hospitals. In talking to the business manager of one of these hospitals he stated that he was trying to quit his job because he felt it was too much to try to manage an institution where everybody who signed up for medical service felt they had an interest in the institution and should have a voice in how it was run."

"One hospital was organized on a cooperative basis, sold a large amount of stock and secured a young doctor who was a live wire and operated for about a year to 18 months. Then he requested a raise in salary, since he was having to work day and night to take care of patients. The Board of Directors decided he was not entitled to a raise and let him go. They secured two or three other doctors, who were not as energetic, and their membership soon dropped off, and the hospital finally could not secure the services of a doctor, and it was run by osteopaths. At the present time it has been vacant for about six months, and is now up for disposition by the courts."

Dr. Dean F. Winn, Director of the Hospital

Survey and Construction Division of the Texas State Department of Health, stated that in his opinion the reason so many of these institutions failed was that when hard times came, membership dropped off and the hospitals had to close on account of finances. He reports that eight rural communities are operating small hospitals at the present time, kept active by bankers or strong leadership.

WHAT was the cause for failure of such a high percentage of well-meant efforts? The cooperative effort in some areas weakened or failed because the need the group was formed primarily to meet was cared for in some other way.

In several areas an effort to secure a county bond issue to build a hospital had been substituted for the cooperative project. Several plans were discontinued because another cooperative was formed in the community. The presence of one or more doctors in a community which had previously been without doctors, was the factor in the discontinuance of some plans. Some groups were not able to get beyond the initial planning stage. The most common reasons given for the failure of farm cooperatives for medical service may be seen among the following:

1. Failure to obtain or retain a doctor. This was the most common reason for about half the failures reported. It is obvious that no medical service can operate if a doctor cannot be kept.
2. Factors developed within the community.
3. Rivalry between communities.
4. One-man leadership or a small group in charge of plans.
5. Poor choice of location.
6. Inability to get or keep nurses.
7. Incomplete coverage offered.
8. Aging membership.
9. Medical opposition.
10. Lack of permanent organization with payroll to pay premiums.

To those living in rural areas—and a rural area may be defined as any community with less than 2500 inhabitants in the largest town—most of these reasons need no comment. The organization of a new bank, a new school board, or a new cooperative venture of any kind would be influenced by four of the first five listed causes of failure. The inability to get and keep nurses is often due to the poor choice of locations.

The factor of incomplete coverage must be attributed to improper or injudicious planning. It is actually an insurance problem. The group organized to form the health cooperative, whether it be Farm Bureau, Grange, or other organization, had not been properly instructed on the benefits to be derived from the cooperative venture. This is closely allied to the aging membership in many rural communities, and is a major hurdle that is currently causing some apprehension among the commercial carriers of health insurance, including Blue Cross and Blue Shield. Many older people, by virtue of their membership in the prevailing farm group which organized the health service, find themselves the possessors of health and accident insurance that could not be bought on the open market.

The prolonged use of this benefit by elderly people has raised, and will continue to raise, the premium rates on what is essentially a mutual benefit undertaking. When this increased cost reaches the point of diminishing returns it will sell itself out of the market, owing to urban groups of workers refusing to pay a premium for a service that may be bought cheaper in a more selected group. All rural physicians are familiar with this problem.

A WORD should be injected relative to the opposition of organized medicine to cooperatives. It must be premised that the only attitude of the AMA and the State Medical Associations is the desire to keep the standards of medical care high, and that this can only be done by keeping medical practice free from the domination of lay boards of directors and from government political control. If cooperative farm health organizations render the best medical service, the people will accept them and they will grow. The history of rural health cooperatives has shown that they may be made acceptable to organized medicine.

Although a great deal of probably unnecessary controversy relative to medical ethics has been seen between the AMA and such plans as the H.I.P. in New York, the Permanente or Kaiser plan in California, and the Two Harbors, Michigan, prepayment plan, it may be noted that these are urban problems. With the exception of Elk City, Oklahoma, where the cooperative owned and operated Farmer's Union Hospital Association fought with organized medicine for 20 years, there is little indication of criticism from medicine itself. The doctors in the Elk City Hospital are now recognized by the county medical society, and a lawsuit against the society, filed in 1950, has been dropped. This problem was solved by a conference between the cooperative group physicians and a group from the local medical society.

Two years ago the Supreme Court of Washington forced the King County Medical Society of Seattle to admit, as members, the 25 doctors employed by the Group Health Association of Seattle, which had been in operation, under a number of names, since its organization about 1931, and represented a membership of over 8000 families, urban and rural.

This brief review of the opposition of organized medicine to cooperative health service groups has not touched on Minnesota, Wisconsin, Texas, or other states which have enacted laws to legalize farm cooperative hospitals in communities of not more than 2500 inhabitants, and for sickness care through cooperative associations. This fact may point out the method to eliminate the too-often publicized organized medical opposition to farm cooperatives, i.e., state legislation favorable to both groups.

The last listed cause for failure of farm cooperatives, lack of a permanent organization with a regular payroll, has doubtless prevented the

organization and caused the abandonment of more medical service cooperatives than any other factor. Few doctors in a rural practice are paid regularly. Crop or livestock selling time does not always synchronize with the birth of the baby or the emergency surgical operation. The compensation paid the rural doctor does not fit well into the monthly, quarterly or annual premium payments of cooperative or other insurance associations.

However, this obstacle has been overcome in many communities in the past decade. In 1943 the Almelund Creamery Cooperative, a successful farm cooperative, organized the first creamery health group which was financed by cream-check deduction for the payment of the group health premiums. Within a year many other counties throughout Minnesota and Wisconsin, with a cooperative creamery, sponsored a health group. These states practically made the cow the symbol of health and security.

Farm groups that do not receive daily checks for farm produce sold could arrange semi-annual or annual payments to coincide with the usual sale of farm products in the respective communities. Farm credit organizations have been developed by many cooperatives to spread the cost of illness, accidents, or natural disasters from one year to another, and should be a routine function of any truly cooperative organization.

It is hoped that the pessimism relative to medical service for farm cooperatives demonstrable in this paper so far has not reached any admission of futility. If this is the best method for giving rural populations adequate medical care, ways and means will eventually be worked out, and failures may be used as guide posts to a future successful cooperative medical service plan. It must be borne in mind that even in industry there is no single pattern for cooperative medical service.

DESTRUCTIVE criticism of any project without constructive recommendations has little value. What, then, can be offered in the realm of medical service for the rural population? This is the segment of our population which has been most often referred to as lacking in adequate medical care. Group efforts in sickness insurance are inevitable, and already large. Group practice and personal physicians as health guides to families are receiving progressive acclaim. The change in the actual practice of medicine has been influenced markedly in the past 15 years by state and Federal hospitals, sickness insurance, and Veterans' facilities to the extent that medical education is undergoing a transition.

The wide coverage of rural communities by Blue Cross and commercial carriers of sickness insurance has not eliminated the general complaint of inadequacy of care in those communities. Blue Cross is a non-profit corporation. It is cooperative as are many health plans, but it has not solved the problem.

It seems apparent that medical care must be given by, and should be organized by, physicians. It may be premised at the start that no town of 300 persons can support a hospital or even a qualified physician. Most small towns have closed their banks, stores and other necessities of a generation ago, and now take their trade to neighboring communities.

Another facet of a solution to this problem is the large number of lay organizations that have taken an intense interest in medical care, and too often dismally failed. The brilliant success of some of these may be exemplified by the Los Angeles P.T.A., which recently received the Lane Bryant Award for the construction and operation of a $700,000 clinic for the children of low income families needing specialized medical attention. It must be remembered again that this was not a rural project.

When a method is recognized that will provide adequate medical care to all rural people and allow the ruralists to maintain the democracy of a cooperative venture, which will furnish adequate medical care without injecting a third person into the practice of medicine, this problem will be solved. This involves active cooperation between physicians and rural patients, with each contributing, but not administering, the program. Ignoring the idiom that fools rush in where angels fear to tread, a suggestion for a workable plan is submitted.

In central Missouri there is a plan, which has been operated for many years, that gives rural medical care and eliminates many of the well-known objections of young physicians going to small communities.

This is group practice which is flexible enough to consist of the required number of doctors to serve a county or trade area adequately. The five physicians in this group live in the largest town, the county seat, which is situated in the geographical center of the county. With two doctors in another town on the edge of the county, these seven physicians give more adequate medical care to the citizens of this county than the 22 doctors who practiced in the county 25 years ago could possibly have given.

The group maintains a 37-bed hospital, privately owned, in the county seat. All five doctors spend forenoons in the hospital building in surgery, obstetrics and other procedures, and office practice in the hospital building. One doctor spends two hours daily in an office in one of the adjoining towns where two doctors were never replaced. One doctor spends three afternoons a week in another town which had not been able to replace a doctor who had died several years ago, and another of the group spends two different afternoons in a third small town which once supported two physicians. The actual time and days spent in the outlying offices is dependent upon the demands of the practice there, and the doctor conducting the part-time office in that particular town is responsible for night calls, emergencies, or other demands for medical service originating there.

This arrangement allows each doctor a reasonable amount of time to attend medical meetings, and take refresher courses and vacations with-

out upsetting the routine of medical service to these several communities. It allows each physician the opportunity to live and raise his children in a town with good schools, churches and recreation. This plan is merely borrowing a page from the book of industrial medicine.

How can a physician distribution of this nature be worked into a cooperative venture in rural communities?

In a recent meeting of the Council on Rural Health of the AMA, three recommendations were made:

1. Doctor participation in lay meetings.
2. Prepaid medical and hospital insurance.
3. Health Councils.

Note the absence of any reference to medical service for farm cooperatives. For several years the Health Council has been the favored agency in many communities for the discussion of medical needs and the solution of medical problems. The Council is constructed around principles formulated by the Council on Rural Health at a national, state and local level.

The average rural county boasts of from 20 to 30 separate women's organizations in addition to men's service clubs, P.T.A.'s, church groups, and similar bodies. Practically every one of this multitude of groups has a health committee with usually unreached objectives. A majority of these organizations are represented on the Health Council if one is in existence in the community. A visit to many of these individual groups reveals a strong desire to do something about health, but few are endowed with the strength, personnel, or finances to get it done. A strong county Farm Bureau, Grange or P.T.A. could easily be substituted for the Health Council.

This could be the answer to Farm Cooperative Medical Service. Health planning on a broad community basis with every group in the community striving for the same goal, and strong leadership will assure the desired result. A group of this type, with advice from the local medical organizations, would be familiar with the medical requirements of the community. It would build no medical centers, and practice no medicine. It could, with greater ease than anyone else, sell Blue Cross or other prepayment insurance to every person in the community financially able to buy it.

A careful study of the community indigent problems could be collaborated with the County Court or other local officials, and in many instances the indigents could be furnished health insurance by the local official at a lower cost than the present medical expense is costing the county. This plan would truly be a cooperative venture in which the community assumed responsibility for the financing through prepayment health insurance. With finances assured, the formation of a group of doctors adequate for community medical services could be obtained as mentioned earlier.

The plan as suggested differs from other successful cooperative health service plans only in the way whereby the community participates in the method of financing the services. If this is treason, it is constructive and workable treason. It eliminates the laity from the practice of medicine, and offers financial security that will induce doctors to go to small towns.

Dermatoses on the Farm

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Unlike the industrial worker, who is usually exposed to more or less specific irritants, the farmer has contact with the widest possible variety of these agents. The dermatoses to which a farmer may be liable are classified here according to their etiological agents.

I. Plants:
- A. Cultivated plants:
  1. Chrysanthemums.
  2. Hyacinths and tulips.
  3. Sunflower.
  4. Beans.
  5. Celery.
  6. Tomatoes.
  7. Potatoes.
- B. Weeds:
  1. Primrose or cowslip—direct contact with plant or contact with udders of cows which have been around the plants.
  2. Ragweed.
  3. Poison ivy.
  4. Poison oak.
  5. Poison sumac.
- C. Wood sensitivity is commonly seen in loghandlers, workmen in sawmills, and carpenters.

II. Bacterial Infections:
- A. Impetigo.
- B. Erysipeloid.
- C. Brucella.
- D. Glanders.
- E. Anthrax.
- F. Milker's warts.
- G. Vaccinia.
- H. Orf.
- I. Infection with *Vibrio septic.*

III. Fungus Infections:
- A. *Trichophyton ectothrix* (T. gypseum) from horses, cattle, sheep and pigs causes ringworm of the beard, nails and body (rarely scalp).
- B. Suppurative sycosis of skin and neck in skin handlers (sheepskin).
- C. Blastomycosis.
- D. Sporotrichosis. E. actinomycosis.

IV. Parasites:
- A. Mites (Pediculoides ventricosus) cause itch seen in wheat- and straw-handlers. The organism does not burrow, but produces wheals with central vesicles which may become pustular.
- B. Harvest itch (thrombidular irritants, harvest mites, chigger). The mite is found in vegetation from April to September and attaches to the human being by forcing a strong hypostome through the wall of the hair follicle or sweat pore. After feeding it falls off, but its deposit of

salivary secretion causes severe local irritation.

C. Animal scabies (sarcoptic mange).

D. Tics, lice, and fleas.

E. Ground itch or creeping eruption (animal hookworm). Creeping eruption is contracted from soil infected with larvae of Ankylostoma which penetrates the skin and may creep for a distance under the skin, causing a pruritic papulovesicular eruption at the point of entry and along its course.

V. INSECTS are a common cause of skin disease among rural inhabitants; they cause dermatitis by their poisonous secretions, the implantation of bacteria beneath the skin or by the deposit of their eggs.

A. Moths and caterpillars: Their hairs may penetrate, carrying with them toxins that produce dermatitis.

B. Myiasis is the term applied to the disease produced by the hatching of larvae of flies within the living human body. Especially prevalent on cattle and sheep ranges.

C. Bites and stings:

1. Bee sting.
2. Housefly.
3. Gad fly and warble.
4. Mosquito.
5. Wasps.
6. Spiders.
7. Ants.
8. Gnats.

VI. PHYSICAL FACTORS:

A. Excessive heat and moisture—prickly heat (Intertrigo).

B. Sunlight—sunburn, urticaria, "farmer's skin," keratoses.

VII. CHEMICALS:

A. Fertilizers:

1. "Guano and Poudrete"—composed of animal, vegetable and mineral matter obtained from excrement, debris, or chemically manufactured.
2. Thomas slag—a powder containing phosphoric acid and quicklime.

B. Insecticides:

1. Creosote.
2. Tar.
3. Mercury. compounds.
4. Phenol compounds.
5. Petroleum distillates.
6. Fluorides.
7. Lime.
8. Benzene hexachloride.
9. DDT.

VIII. CLASSIFICATION: DIAGNOSIS AND TREATMENT:

A. Diagnosis:

1. Knowledge of potential hazards on the farm.
2. History of farmer's activities prior to the eruption.
3. Examination of type and configuration of the eruption.

B. Treatment (treatment will vary and be dependent on disease entity):

1. Prevention and protection against the elements.
2. Protection against insecticides, including use of machinery, protective clothing, bathing after exposure.
3. Wet dressings.
4. Bland emolient creams.
5. ACTH (in severe cases).

Human Health Problems and Animal Disease

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THE significance of animal disease in relationship to human health is fairly well known in regard to such diseases as rabies, tuberculosis, tularemia, brucellosis, etc. But in other diseases such as leptospirosis, Q fever, psittacosis and the encephalitides, the lack of knowledge of their public health aspects has in the past hindered our over-all concept of their importance.

A few years ago a committee on zoonosis (under the joint auspices of W.H.O. and F.A.O.) prepared a list of 86 different diseases actually transmissable between other vertebrate animals and man. While probably no more than one-third of these are of special importance in the United States, many of the remaining two-thirds are major problems in foreign countries.

The effects of animal diseases may be twofold in their effects on human health. Not only do they result in human infections, but they also have a very direct bearing on the food supply of the world, which is so necessary for human health.

The diseases are spread in a variety of ways. Urban dwellers as well as persons whose vocations are closely allied to agriculture are exposed to contact with the causative agents. The diseases may be spread by personal contact with the affected animals and their excrements, by contamination of human food through infective animal discharges, by transmission from an infected animal via insect or rodent host vectors, by contamination of air and water, by consumption of infected animal products in the form of milk and meat.

While we have at our disposal the means to control and possibly eradicate certain diseases transmissable to man, there are many others of which we have only rudimentary knowledge insofar as their control is concerned.

In those diseases where control is feasible, we have several factors to consider. Education of the people as to the public health aspects of the disease, a controlled survey of the problem, legislation for necessary laws, and a study of the economics of such a program are integral preludes to the actual campaign.

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In those cases where we do not have the necessary knowledge to control the disease, campaigns to acquaint the public with the hazard, eradication of possible carriers or vectors, and personal hygiene are important measures.

Particular attention is paid to the following:

Disease	Animal Source	Etiological Agent	Means of Spread	Prevention
Rabies	Dog, cow, skunk, squirrel, bats (all warm-blooded animals)	Virus (neurotropic)	Contact with saliva of infected animals either by bites or handling of animal	Elimination of rabies in dogs via immunization and quarantine
Brucellosis	Cow, pig, goat	Bacterial Brucella abortus Brucella suis Brucella melitensis	Milk, handling of aborted feti and afterbirth. Handling of fresh slaughtered pork. Handling of biologics.	Pasteurization of milk. Personal hygiene for persons exposed because of occupational hazards. Elimination of disease via immunization.
Leptospirosis	Dog, cow, rat, horse	Spirochite Leptospira canicola Leptospira icterohemorrhagicum Leptospira pomona	Contact with infected animals and their excrements (particularly urine)	Sanitation, eradication of rats, mice. Avoiding urine of dogs. Immunization of animals.
Psittacosis	Primarily parrots and parakeets	Virus	Inhalation of dried fecal and nasal discharge of infected birds	Establishment of a disease-free parakeet industry.
Q Fever	Cow, sheep, goat	Rickettsial (Coxiella burnette)	Milk and raw milk products, environmental association with a dairy. Occupational exposure to livestock	Pasteurization of milk.
Tularemia	Wild rodents (rabbits most common)	Bacterial Pasteurella tularensis	Contact with infected animals or through bites, blood-sucking, vectors	Avoid contact, wear rubber gloves while dressing rabbits, careful cleaning of hands and disinfecting following handling, thorough cooking.
Ringworm	Cat, dog, cow, horse	Fungus Microsporan species Trichophyton species	Contact	Avoid contact with affected animals.
Equine Encephalomyelitis	Fowl, horse	Virus	Contact with affected animal or fowl	Vaccination of horses and mules.
Trichinosis	Pig	Trichinella spiralis	Raw pork	Cooking of all pork for human consumption. Freezing pork at 5° F 20 days. Gamma irradiation of pig carcass.

Summaries of Other Presentations

THE DANGERS OF NEWER INSECTICIDES AND PESTICIDES by HARLAN R. SHUYLER, Ph.D., President, Conservation Industries, Kansas City, Kansas.

Chemical agents for the control of insects and rodents are necessary for the control of disease vectors, agricultural crop pests, and insects which are a social nuisance. The use of many new chemicals has increased infinitely the need for understanding of the possible dangers inherent in their employment. Before general use, of course, these chemicals are studied extensively by industry research teams and Federal and state agencies. Prior to general usage, the knowledge of dangers of a new material is derived from animal experimentation. Most additional knowledge comes with the occasional accidents that occur involving humans or domestic animals. Those who are workers in pesticide manufacture, formulation and routine application are the persons most likely to be the victims of accidents, since they are often subjected to higher concentrations of a material than are the occasional users of these materials. A majority of the newer materials, such as chlorinated hydrocarbons and organic phosphates, can be the cause of accidental poisoning through ingestion, inhalation and or skin absorption. But, it should be understood that they have been responsible for only a very few cases of poisoning, resulting in only an occasional death. Some, such as DDT, have never been known to be the sole cause of death.

DDT, like other chlorinated hydrocarbons, acts on the central nervous system and can cause tremors and convulsions. Most of the chlorinated hydrocarbons are stored in the fatty tissues of the body and the possibility of release during prolonged sickness accounts for much of the concern regarding residues of these insecticides on food. Some of the materials, such as lindane, have been responsible for urticaria and headache or nausea in a few instances. Persons with chronic liver damage, such as chronic alcoholics, may be extremely susceptible to some of this group of insecticides. For example, chlordane, in amounts far below an acute dosage, has been suspected of contributing to the cause of acute illness and or death of two or three persons with fatty degeneration of the liver. Barbiturates have been used in treatment of poisoning by chlorinated hydrocarbons.

The organic phosphates are proving to be extremely valuable and versatile insecticides; yet some of them, such as parathion, are among the most hazardous materials yet used as pesticides. Considering these dangers, the safety record has been remarkable. Inhalation is dangerous. These

organic phosphates are readily absorbed through the skin. When present in the body, they are irreversible inhibitors of cholinesterase and, in sufficient quantity, any of them may be fatal. Atropine and oxygen are administered in the treatment of poisoning by organic phosphates. Fortunately, many of the organic phosphates which have been introduced recently are relatively non-toxic to most mammals.

The use of sodium fluoroacetate as a rodenticide has introduced additional hazards to the field of rodent control. This extremely toxic chemical, also known as Compound 1080, interferes with acetate metabolism, and there is no known antidote. Monoacetin and magnesium sulphate are suggested for use as possible antidotes, based on work with experimental animals. The anticoagulant rodenticides are relatively non-toxic. In the event of poisoning by these materials, such as warfarin, vitamin K_1 is an effective antidote but blood transfusions are sometimes needed.

Understanding of the mode of action of pesticides and general principles of treatment of pesticide poisoning will allow physicians to contribute materially to reduction of the fatalities and illnesses due to the dangers of the newer insecticides and rodenticides.

CARBON MONOXIDE: A DANGER OF FARM AND HOME by JOHN L. MORGAN, M.D., Internist, Emporia, Kansas.

In Kansas, during the years 1950 and 1951, there were 58 deaths reported as due to carbon monoxide poisoning, and most of these resulted from faulty gas stoves in poorly ventilated rooms. The gas itself is odorless except at very high concentrations when it may smell like garlic. The effects on the body are mainly those of anoxia since hemoglobin has a 300 times greater affinity for carbon monoxide than for oxygen. The anoxia affects the smaller blood vessels throughout the body and, because of the universality of these pathological changes, it is difficult to outline a definite symptom picture. Headache is usually an early symptom. There are certain ominous symptoms and signs which make for a poor prognosis such as prolonged coma, incontinence, a high fever and a mental relapse after apparent recovery. Physical findings are just as variable as the symptoms, but a cherry red color of the lips and skin may be present.

There are many quantitative and qualitative tests which may reveal carbon monoxide in the blood, if the specimen is taken in the first few hours after exposure. Often the physician is so busy keeping the patient alive and quieting the relatives and the curious bystanders that he finds little time to take a blood specimen for analysis. But the "alkali test" is a simple qualitative test and is worth knowing. In this test, two drops of the patient's blood are placed on a porcelain plate with two drops of 25% sodium hydroxide. A reddish color remains in the presence of carbon monoxide hemoglobin, whereas normal blood similarly treated turns brown. Treatment consists in removing the patient to fresh air from the source of the gas, and administering artificial respiration if he is not ventilating properly. As soon as it can be made available, oxygen with 5% to 10% carbon dioxide should be administered. The carbon dioxide component of this mixture is thought to increase the depth and rate of respirations and hence clear the body of carbon monoxide more rapidly than if oxygen alone is used. Drugs have no specific usefulness in treatment. Various lasting sequellae may persist after the patient recovers from the acute gassing, but fortunately these are extremely rare considering the number of patients who recover completely from the initial poisoning.

"Chronic" carbon monoxide poisoning or, specifically, the production of symptoms by intermittent exposure over long periods to low concentrations of the gas has been claimed to occur. There are some very substantial arguments indicating that chronic poisoning doesn't exist, though the cumulative effects of repeated episodes of acute poisoning may make the differentiation difficult.

PROTECTION OF MAN AGAINST ANIMAL DISEASE by J. E. MOSIER, D.V.M., Professor of Veterinary Medicine, School of Veterinary Medicine, Kansas State College, Manhattan, Kansas.

Eradication of animal diseases would constitute the ideal means for protection of man against animal disease. In the absence of eradication, control of the disease becomes of prime importance. Control may be based on sanitary and immunological means in the host animal, elimination of the vector or indirect transporter of the disease, and education of the people as to the hazards of animal disease.

The combined efforts of public health officials, general practitioners and veterinarians are essential in the battle against epidemics of animal diseases in man.

PULMONARY AFFECTIONS ASSOCIATED WITH RURAL LIFE by H. SCOTT VAN ORDSTRAND, M.D., Chief, Department of Pulmonary Disease, The Cleveland Clinic, Cleveland, Ohio.

1. Specific Pneumonias: brucellosis; tularemia; typhoid; anthrax; glanders (actino bacillus mallei); psittacosis; Q-fever (coxiella burnette).

2. Fungi: histoplasmosis; coccidiomycosis; aspergillosis; nocardiosis; actinomycosis; blastomycosis; moniliasis.

3. Specific Occupations: byssinosis—cotton workers; baggassosis—dry fiber of sugar cane.

HEART DISEASE IN RELATIONSHIP TO THE FARMER by R. EMMET KELLY, M.D., Instructor in Medicine, St. Louis University School of Medicine, and Medical Director, Monsanto Chemical Company, St. Louis, Missouri.

The fact that we are just scratching the surface in regard to this problem is emphasized. Agricultural workers tend to remain in their employment to an older age than non-agricultural workers. Announcement was made of the production extension studies which is a five-year program on work simplification and energy require-

ments on the farm. This started six months ago and no results will be forthcoming for some time.

FRACTURE PROBLEMS OF FARM ACCIDENTS by CHARLES R. ROMBOLD, M.D., Chief, Orthopedics Section, The Wichita Clinic, Wichita, Kansas.

The mechanization of farm labor has progressed to such a degree that fractures occurring on the farm now are similar to those occurring in industry. Fractures produced by power tools, frequently being very complex, are difficult to treat and require specialized equipment and training. By the necessities of place and time, on the other hand, treatment must be administered with available equipment and training. Rehabilitation measures, frequently required in this group of fractures occurring on the farm, are similar to those in industry and are considered under the title "Rehabilitation of the Post-Fracture Patient."

Italian National Industrial Injuries Insurance Institute

THE medical services of the Italian National Industrial Injuries Insurance Institute, among the most comprehensive in Europe, are being continually expanded so that its equipment and activities may answer any new requirement. The technical standard and the number of installations, the moral and professional qualities of the doctors and of the medical staff, grant the Italian worker a medical assistance which helps him through his disability.

One of the basic features of INAIL's medical services for disabled workers is to restore as much as possible of their working capacity; medical care, therefore, has the nature both of a right and a duty. It begins immediately after the injury and has no time limits, as it continues, through an uninterrupted succession of services, for the duration of temporary disability, after surgical recovery, and after the payment of a permanent disability pension has begun.

Medical care for occupational diseases follows the same general principles, but special provisions are made for diagnosis and special therapeutic needs; medical care is given both first cases and relapses.

Medical and surgical care, in the wider meaning, includes functional and vocational rehabilitation of the disabled workers; the majority attain complete recovery of working capacity, while only a small percentage cannot return to productive work.

INAIL, however, does not only concern itself with medical and surgical care, thermal hydrotherapy, functional and vocational rehabilitation, but also, if necessary, supplies without delay any prosthesis or replaces old ones—the term "prosthesis" includes any device which aims at eliminating or reducing the loss of working capacity.

INAIL carries out, in other terms, any possible medical, prophylactic, rehabilitative, and, more generally, any material and moral assistance, also using to this end the services of a number of specialized social workers, in the effort to render less severe the consequences of an injury.

INAIL's medical services are under the direction of the General Medical Department which is part of INAIL's Head Office. The General Medical Department—through its regional Medical Advisers (14), and the Medical Officers attached to each Branch office of INAIL (92)—directs and controls the regional and provincial medical services, including:

Traumatological Centers: specialized medical establishments for the hospitalization of injured workers. Seven centers are now functioning in Milan, Bologna, Rome, Bari, Palermo, Iglesias and Trento (721 beds); eight are now being built in Turin, Milan, Padua, Genoa, Budrio (Bologna), Florence, Rome and Naples (1,530 beds).

Convalescence Centers: residential homes for the after-care and rest of workers still suffering from the consequences of injuries or occupational diseases. Five are now functioning at Colle della Maddalena (Turin) Villa Giovio (Como), Malcesine (Verona), Marina di Massa and Trevi (425 beds); one is being set up at Pergine (Trento).

Rehabilitation and Vocational Training Centers: homes where disabled workers are being rehabilitated and trained in special jobs. Two are now functioning in Milan and Palermo.

Rest Centers: homes for severely disabled workers, particularly for those who cannot receive adequate assistance at home. One is now functioning in Santorso (Vicenza); one is being set up at Monserrato (Sassari).

Study and Assistance Centers of Occupational Diseases: eight now function in Cagliari, Genoa, Milan, Naples, Florence, Bologna and Roma (2); three are being set up in Palermo, Bologna and Perugia.

Traumatologic Departments: set up in civil hospitals, with INAIL's medical staff—11, with 815 beds.

Traumatologic Sections: set up in civil hospitals, with medical staff belonging to the civil hospital—19, with 504 beds.

Surgical Clinics: 143, set up in each Provincial Branch, and in each local office of INAIL.

Special Clinics: 76, specially set up in big industrial centers and distant industrial areas, for more effective medical assistance to insured workers.

Mobile Clinics: 15, set up in isolated localities where temporary work is being carried on.

Mobile Mass Miniature X-Ray Units: three, set up for the prevention of occupational diseases (silicosis and asbestosis).

First-aid Stations: 6,013, set up in localities which are far from urban centers, for emergency cases; particularly important among them are rescue and first-aid stations in mines (29).

INAIL's Sanitary Staff is made up by 320 full-time surgeons; 536 part-time surgeons; 10,297 local doctors, under special agreements, who are responsible for less severe cases; 450 specialized nurses; 100 auxiliary technical experts.

The following are some relevant data on medical services afforded during 1953:

Cases treated in clinics	2,503,973
Cases treated by physical therapy	1,355,290
Ophthalmic cases treated	477,619
Cases having required x-ray diagnosis	236,961
Cases having required specialist assistance	53,761
Hospitalization	
Number of patients	117,860
Days of hospitalization	1,525,802
Prosthesis	9,315

Accident Proneness

—A CLINICAL APPROACH TO INJURY-LIABILITY

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DIFFERENT backgrounds and interests of various investigators have contributed to a misunderstanding of accident proneness and to different degrees of optimism concerning constructive approach to the problem it presents. We are now at a stage where emphasis must be placed on the work of the clinician. There is a vast amount of practical data available at the present time to utilize in treating the injury-liable. The purpose of this paper is to comment on a few clinical studies of the injury-liable, and offer a note of realistic optimism concerning an approach.

Simple re-emphasis of some important contributions to our knowledge of the mental mechanics of a major medical enigma seems in order. The fact that many industrial accidents are the result of emotional problems is not a new discovery, nor is the recognition of the injury-liable individual. The problem is, rather, utilizing our present concepts of the personality of this patient, what can we *do* to lower the industrial accident rate still further.

The National Safety Council estimates that non-fatal accidents in 1952 approached the 10 million mark, with a third of a million people receiving injuries resulting in some permanent impairment.[1] It is evident that accident prevention is a major public health problem. Indeed, Sutter's[2] term the "cancer of industry" seems most relevant when applied to the occupational aspect of this problem. Accidents cause more loss of life years than any illness except heart disease, and 30% more productive working years are lost in accidents than with cancer. The National Safety Council has estimated the cost of accidental injury to industry at $45 per worker per year.

It would demonstrate gross ignorance to presume that a simple system can be devised for ready identification of accident-prone individuals. There are too many causes of injury proneness. Yet, there has been sufficient research in the field to give us an adequate start in coping with this situation. If it be true that protective devices and engineering safeguards have come close to the point of diminishing returns, it is *now* that we must emphasize what we do know of the individual and the group in which he works in our campaign against accidents. The pure scientist seems most concerned with how *little* knowledge we have at hand on this subject. It is the more practical clinician who must utilize what we *do* know; else we may lose those basic truths we have already attained in our search for the answer to industrial injuries.

IN SPITE of recent criticism of both the term and concept of accident proneness,[3] the general acceptance of the individual with frequent accidental injuries confirms a vast amount of research on the human motivation in the cause of accidents. While Charles Dickens wrote, "Accidents occur in the best regulated families," it remained for the Industrial Fatigue Research Board of Great Britain during the First World War to demonstrate the existence of a disproportionate number of accidents in some of the best regulated individuals. This basic work of Greenwood and Woods[4] laid the foundation of our present concept of the injury-liable person. Their research established 20% of workers to have the vast majority of accidents while the remaining 80% are relatively accident-free.

In the middle 20's Marbe[5] demonstrated that the more accidents a man has had in the past, the more likely he is to have an accident in the future.

It was with Dunbar's paper in 1936,[6] that there began to develop some unanimity of opinion regarding the mental mechanics of the injury-prone personality. In reporting on her group of fracture patients, she noted the most striking factor of these people was the guilt and resentment aroused by the injury. About this time Ackerman and Chidister's[7] study of children showed that in most accidents there is an element of intention, though the intention is by no means conscious.*

In a study of Air Force pilots who had two or more accidents during the last war, it was found that the second of a series of accidents tends to follow rather quickly upon the first.[9] It was shown that as time elapsed subsequent to the first accident, the number of second accidents diminished.

More recently some interesting work has come from Le Shan. One of his concepts is that of the "safety-prone" individual; the one who never has an accident.[10] We can expect this group of "safety-prone" people to be equally fruitful subjects for study in contrast to the accident-prone.

*Carl Menninger[8] coined the phrase "purposive accidents" for accidents which he felt were frequently related to unconscious intent and which occurred to gratify deeper hidden purposes of the personality.

Another approach to the study of accident proneness is that of Fuller, of the University of Minnesota,[11] who studied the records of 61 nursery school children, noting that even at this early age children show "repeater" tendencies in accidents. Children who played together were found more liable to injury than those who played alone, and the involvement of other children in the accident was found to be a pattern of some children and not of others.

In recent years we have seen some practical application of research in this field. As safety engineers have become accepted and their work has been more widely utilized, we have seen them taking more advantage of their knowledge of the "personal" factors in accident prevention, utilizing frequently a clinical approach to the problem. The physician is paying more attention to the accident-liable individual and is more observant of evidence of past injury in physical examination. Yet use of much of the material of accident research has not been made. Many of the recommendations following comprehensive studies of accident-prone individuals and groups have not been utilized. Physicians working in the field of occupational medicine in particular continue to feel much frustration when faced with the problem of an accident-prone employee. It would seem that more publicity is given to the impractical statistics, to the abstract psychodynamic formulations of the injury-liable worker and to superficial, unpractical advice of self-styled industrial psychologists.

IT HAS been well established that the majority of accidents are due to personal patterns of reaction to stress. It is this pattern which must be described in order to outline an effective program for control of the injury liable in industry. As Douglas Jerrold once commented, "Some people are so fond of ill luck that they run half way to meet it." If we may think of the injury-liable as fond of bad luck, it then becomes important for us to examine the forces directing his activities in such a bizarre way.

Among the studies of individual personalities who might be considered accident liable, one of the most comprehensive evaluations is that of Flanders Dunbar.[6,12,13,14] By 1939 Dunbar and her group had completed a study of 160 patients with fractures, the majority of whom gave a long history of previous accidental injury. A composite picture of the character which developed runs somewhat as follows. He is decisive or even impulsive. He concentrates on immediate pleasure and satisfaction, and is apt to act on the spur of the moment. He likes excitement and adventure but dislikes planning for the future. A large number of patients with an accident habit had a strict early environment, and from this derived a considerable amount of resentment against persons in authority. These patients were primarily people of action, not of planning; people who spent little time deliberating between the impulse and the execution of the impulse. Dunbar's studies began to reveal patients who are rebelling not only against external authority but also against the control of their own reason. While such a person is deeply resentful of authority, his conscience makes him feel guilty about his rebellion. In the unconsciously provoked accident he is able to express his resentment and revenge while at the same time atoning for his rebellion by suffering the injury. The injury-liable person then, like the fellow who always has to have a new wife, is likely to be a person who seeks positive change in his environment.

The pattern of his relationship to authority is of interest. Such authority symbols as the boss, the church, and the family frequently play an important role in accidents. Accidents occur in situations which tend to call attention to this conflict with authority. These situations usually involve a particularly stressful relationship. A high percentage of accidents occur prior to anticipated painful situations such as on the way to work or especially on the way to interviews relating to new jobs; with children, when playing games or doing things forbidden by their parents. The accident, in general, serves the purpose of punishing the patient for something he feels he should not do, or serves a secondary gain which prevents a particularly stressful event from occurring.

Thus we see a personality pattern which can be attributed to one group of injury-liable individuals. This is not to say that this particular personality we have described is universal among accident prones. It is not to imply that all these traits may be found in any given accident repeater. There is, however, considerable evidence in the literature to support the general conclusion that these are frequent findings among the injury-liable groups.

ANOTHER study[15] of injury-liable persons examined the interpersonal relationships of members of high and low accident groups among drivers. Much previous research was borne out when a marked intolerance for and aggression against authority stemming from early childhood was noted. A high percentage of the accident prones demonstrated considerable antisocial behavior. In contrasting the two groups it was noted that drivers with a low accident record were serious, stable, well-adjusted individuals with well integrated home backgrounds. The high accident group were found to be aggressive and unable to tolerate authority either at a parental or a community level. Here, shown in an objective way, we find the frequency with which the injury-liable individual comes into conflict with recognized community methods of enforcing law and order. The pattern of reaction to authority is not limited to the control of environment on the job by means of accidents but also off the job by both accidents and antisocial behavior. This emphasizes the importance of seeking social information from applicants for any job. It does not pretend to imply that all those who have come into conflict with authority in the past will develop an accident repeating pattern. It does certainly demonstrate the necessity of careful ob-

servation and initial job placement of the individual whom we may consider to be potentially injury-liable.

THE setting in which an accident occurs and the state of mind of the person injured are of great importance in any accident. Together, they create the situation productive of the industrial accident. One might consider this in terms of *situational accident liability*. This factor is present in every employee to a varying degree in any given period. We could even say that any man who has had one accident was at least at that time in a situation of accident liability, but a man can be liable to injury even for a long period of time without having a high record of injury, because the records refer to the *fact* that an injury has occurred, while the term situational injury liability refers to the *possibility* of it happening. Between the fact that an accident happens and the possibility for it to happen is the interplay of a great number of factors which are hard to detect. The most commonly encountered situation is that of a brief proneness to injury due to temporary stress.

As an example we might cite the case of a paper-cutter with long experience in a large manufacturing plant who recently complained of headaches. Physical examination revealed hypertension. It was felt by both his physician and his employer that he should be retired from his job. He was close to 60 and a favorable pension plan was arranged. After much hesitation he accepted the company's offer even though he felt he would be lost without work. His last day on the job came. During the final three hours at his machine, despite all safeguards, he cut off one hand. This was his first major accident.

The close relationship between the resulting symptom of accident and major conflict, such as the paper-cutter's despair at losing his job is clear, but there is not always such an obvious cause and effect relationship between accident and stress. The situation is not always as transient or readily attributable to temporary insecurity.

We must consider the inexperienced worker and the individual preoccupied briefly with an acute personal problem. We must think of the worker who appears superficially consistently injury-prone, but who, in reality, gets hurt only when working with one specific company or the man who has but one or two accidents during the brief period.

The interpersonal relationships of employees, in a work group, become important. We have noted that children who play together are more apt to get hurt than those who play alone. When an employee works in close physical contact with his fellows he depends on them in some measure for his own safety. A grinder in the chipping room of a foundry may forget to tighten the nut after changing an abrasive wheel. Soon after he turns his equipment on, the wheel vibrates wildly and shatters, throwing pieces in all directions. Unfortunately safety devices are not designed to protect all vulnerable parts of his co-workers. The *situational* emotional factor of realization by members of a work team that a safety hazard exists in the form of one member of the gang can conceivably predispose to anxiety and accidents by other members of the group.

One of the most interesting concepts is that of disregard of safety devices. Why does the worker in an obviously dangerous situation "forget" to wear his safety helmet? Some people have fears which make it impossible for them to use these safeguards for protection. Such things as goggles, masks, and head coverings, gloves and special boots may become the target for derisive remarks on the part of employees. While some of their phobias may have roots in deep-seated individual personality problems, it appears that part of the explanation lies in the *meaning* of such devices to the person. What do these safety aides symbolize to him? Do some of the men refuse to wear shields because they feel such "crutches" imply a lack of self-reliance? Does it imply a lack of bravery to the independent citizen? Many of us resent having to rely on anything but our native ability. The suggestion of a need for artificial contrivance becomes a threat to our sense of security. How does the work group feel toward the introduction of such devices? Is the compliant soul who readily accepts their use the one most respected? Or, does his acceptance symbolize weakness to other employees? Does management condone such behavior? Do we find a foreman coddling an employee who might be considered "dangerous," with a comment, "He is such a good worker we couldn't possibly take him off the machine. . . . It seems as if he just has to cut off a finger every so often to remind himself that it is dangerous."

TRANSIENT situational maladjustments predisposing to accident can be many and varied. They may be job-induced or related to a family problem. They may involve specific phobias, worry about job security, financial problems, or concern about the new baby at home. They may be related to temporary periods of stress or to brief feelings of guilt and unconscious desire for self-punishment. Some of these factors extend over a considerable period of time. All of them produce inattention to the immediate job situation. They may result in apparent laziness or give rise to what appears to be a poor attitude. Propensity to injury is probably related in part to the ability of the worker to express himself adequately in his work situation. Can he gripe about his work? Has he friends among his fellow workers with whom he feels at ease? Is he able to express himself in non-verbal ways?

It is important to emphasize individual variation. Rarely will two individuals react in exactly the same way to a given situation. We must constantly consider the dynamic equilibrium in which the employee lives. With such a total picture in mind, we must not be too anxious to blame a single aspect of the job situation or a single personality characteristic for a given accident. We

find we must carefully evaluate each accident as a separate episode.

We see then two separate and distinct factors in the human causation of accidents, the injury-liable personality and the injury-liable situation.

PERHAPS the most important point to emphasize is that, whatever the immediate conditions of an accident, it always occurs in a setting of human motivation.[16] Whether we are dealing with the psychological factors leading to an accident or with the psychological factors influencing recovery from an injury, these factors all may be explained in terms of individual mental mechanics. It does not take a psychiatrist to recognize that the majority of accident repeaters show evidence of unstable personalities.[17] By studying these "abnormal" cases in detail, the industrial physician will probably have the opportunity to detect much of the individual problem.

The earliest programs of approach to the problem of the injury-liable individual, utilized the history of repeated accidents. One such study aimed at reducing the over-all accident rate in an industrial concern is cited by Rawson.[18] He noted that in a large trucking concern, drivers who demonstrated a tendency to have accidents were transferred to other jobs where it was found that their accident proneness persisted. As the weeding out of accident-prone drivers continued, it was found the accident rate of the company as a whole was reduced to almost one-fifth its original level and the average number of miles between accidents increased five times. However, the more realistic prospect of coming to grips with the human factor in accident prevention seems more practical. The acceptance on the part of industry of accident liability as a *problem of living* is the first step in this direction. This in itself entails recognition and acceptance of the motivation of the injury-prone individual. This recognition of the accident-prone person as sick in the sense that he is emotionally maladjusted throws a new light on the accident prevention problem. This concept is rapidly gaining acceptance.

SINCE psychiatry is able to demonstrate that most of one's basic personality is laid down in early childhood, including various patterns of behavior, one approach to the injury-liable individual may be found within the realm of childhood mental health. This point of view is perhaps the best taken by Soddy.[19] In discussing childhood traffic accidents he comments that the child may wish to defy, attack or annoy the driver who, in the child's mind, may not be thoroughly distinguished from his teacher or his fussy mother. For the child, traffic may represent his own feelings of anger of which he is so terrified. This normal sense of a child's helplessness may contribute to the need for testing himself and his environment; attempting to prove that he is able to master such things as the control of traffic.

It is but a short step from the recognition of this mental mechanism to a realization that many immature adults function in this same childlike way when under stress. It is doubly important to recognize that reason and conscious knowledge do not govern everything. Accidents should be understood both in their total setting and in terms of what they really mean to the participants both in fact and in phantasy.

Safety education in childhood becomes an important factor in the prevention of accidents. The type of such education for children and adults becomes even more important. The goal is not merely to instill a sense of duty to authority figures, but to encourage wholeheartedness on the side of responsible behavior. Our greatest natural ally in this education is the child's own desire to grow up. Dogmatic and direct teaching methods are the least satisfactory for conveying emotionally powerful ideas. The negative aim of avoiding the excitement of hostility is at least as important as the positive aims. Hostility may be aroused by the ideas themselves, by the method of conveyance, and by the person conveying them, leading to an *increase* in the danger to the unstable individual. The facts and statistics of danger can be handled by direct instruction. Ideas of emotional importance, however, lend themselves to more indirect techniques of films, plays, discussions, and the spontaneous production of ideas by groups.

ONCE the accident-prone individual has been recognized, the only complete solution to this accident addiction appears to be a problem for the psychotherapist. As one might gather from the study of aircraft accidents during the last war, rather brief therapy immediately following a major accident can be expected to be of considerable benefit in preventing successive accidents of a potential series. Proper psychotherapy after the first accident may well prevent the development of accident liability in the future. Perhaps the most important recommendation one author makes is that special attention to be paid to patients with injuries who give a history of early neurotic traits or several previous accidents. Therapy at this time, albeit of a brief nature, may well save an individual becoming a chronic accident case, though an accident habit once established frequently *can* be broken by psychotherapy. The importance of avoiding excessive spoiling or severity by the physician during the period of incapacity which results from the accident is a second consideration. Special attention also should be given the problem of "secondary gain." What does the patient hope to gain; what has he already gained from his injury?

Another recommendation is to the effect that attention must be given in most cases to the patient's emotional problems both immediately after the accident and during the period of convalescence. Relief from the first feelings of guilt or revenge often helps relieve muscle tension as well as concentration on the injured portions of the body which may seriously impede recovery from the injuries.

Although the consulting psychiatrist may be of assistance, the industrial physician with an

awareness of the problem can do much to utilize these recommendations.

Baro,[20] introduces a fundamental concept in the therapy of the accident-prone individual, emphasizing that many times an emotional problem is developed not directly as a result of an injury, but because of thoughtless statements made by people surrounding the patient. This underlines the necessity of gaining as accurate as possible an account of each event surrounding the accident. Exploration of the social and work situations of the accident repeater may reveal potential therapeutic steps to be taken in the easing of his injury liability. Discovery of points of stress in his work and home situation becomes important.

Environmental stresses include physical, psychological, and social elements. All may at times be considered stressful and combine in making an environment safe or unsafe. They cause accidents only in so far as they create a degree of injury liability. Here we must deal with the fact that individuals react in varying ways to their problems of living. The emotionally labile individual is much more susceptible to social stresses than the stable, well balanced person. One might state that there is only one environmental factor which can cause an accident directly. That is the degree of hazard of the job itself; the degree of stress within the job situation. The results, such as damage and injury from the exploding of the grinding wheel among a group of workers, will not depend on the individual difference in injury proneness. On the contrary, the effects of a quarrel with a foreman will differ greatly, and may be a direct cause of accidents for the unstable employee.

Once an accident repeater is spotted, immediate steps should be taken to aid him as an individual in coping with the problems which produce these symptoms of the accident repetition. Practically this is a job for teamwork by the industrial medical and personnel departments. Thorough physical examination, with fairly detailed evaluation of possible factors of stress in his habits of living, is important.[22]

There is little in the literature today concerning therapy for the accident-prone individual as such. Among psychiatrists working in industry we find little if any long-term psychotherapy practiced. In fact such persons as Burling[23] comment on the short-term nature of such treatment.

Summary

FROM the foregoing presentation of clinical aspects of injury-liability it should be noted that there is no panacea; no "one shot" prescription for dealing with the injury-liable personality in industry. Rather, accident-proneness patterns take on much from the make-up of each injury-liable person. One might conclude that there are as many accident-proneness patterns as there are individual accident repeaters. Thus there must be a variable approach to the problem.

Many of the mental mechanics have been pointed out and illustrated. The influence of environmental stresses and the total psychological work climate were discussed. Some of the individual psychodynamics and characteristics of typical injury liable personalities were touched upon. The concept of situational injury liability was introduced as a working frame of reference for discussion of the multiple causes of the accident syndrome. Various considerations for treatment of this entity were mentioned and included both the immediate and the long range. An approach to childhood accidents and positive steps in the prevention of industrial injuries were included. The psychological aspects of treatment immediately following injury were also an important consideration. It is to be hoped that this relatively optimistic program of affirmative measures which may be taken to attack the problem will not be lost in another series of gloomy reports to the effect that, since the injury liable personality cannot be identified by psychological tests, he is therefore non-existent and so untreatable.

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The Psychiatrist in Industry

—A Preventive Approach—

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LITTLE has appeared in the medical literature to date regarding the wider contributions a psychiatrist can make in the industrial setting beyond transferring from his office to the plant the functions traditionally ascribed to him, e.g., consultation and treatment (psychotherapy, somatic therapy, etc.).[1,2] The author, far from wishing to deprecate these important services, feels that it is necessary for any complete industrial medical program to make other psychiatric services available to all employees from the highest in the industrial hierarchy to the lowest.

However, it is impractical—both time-wise and financially—to treat every person who might be a suitable candidate for either brief or more extensive psychotherapy, whether he be an employee who is accident-prone, a supervisor who destroys the morale of his men by unfairness based on his own personal problems, or an executive who hesitates to make important decisions because of his own insecurities. Treatment, therefore, is usually reserved for those with more serious, or at least more obvious, emotional disorders. Yet, management is becoming increasingly concerned with the mental health of its employees. It has recognized that productivity in the broadest sense is intimately related to the emotional well-being of plant personnel as reflected in the level of morale and job satisfaction, the problem-solving skills of key personnel, the uninterrupted flow of communications, and the effectiveness of interpersonal relationships among employees. While for some people work is a source of great pleasure and deep satisfaction, it is for many frequently the arena for friction, strife, discontent and frustration, as mirrored in statistics of turnover, absenteeism, accidents, illness and alcoholism. Too often an employee's vocation is solely a means to an end and is intensely disliked *per se*. It is not surprising, then, that in such an environment the basic needs of many people are not being met, frustrations from other areas of their lives are intensified, and additional stress is constantly being placed on their capacity for maintaining mental health. Thus, at first glance, the enormity of the task may seem to be an overwhelming one.

This paper is based on the author's experience with experimental programs sponsored by the Institute of Industrial Relations, University of California, Los Angeles, and with programs arranged for industrial concerns in the Southern California area.

What, then, *can* be done? The emphasis must be shifted from treatment to prevention. The industrial physician does not wait for accidents to occur, but consults with the safety engineer in order to erect proper safeguards; he does not wait for noxious substances to lead to dermatoses or internal disorders, but rather takes means to prevent this from happening. So too, the psychiatrist who thinks in preventive terms does not wait for an executive to develop a gastric ulcer or hypertension or a "breakdown" before he concerns himself with his anxieties and conflicts; he does not wait for a disgruntled employee to "blow off steam" in such a manner that he disrupts the morale of his whole division before dealing with the interpersonal problems that may be at the root of it. The addition of a preventive approach to the industrial psychiatrist's mode of thinking is of tremendous advantage to all concerned, and enlightened management is anxious to take advantage of knowledge and skills in this area.

Human Relations Training

THE TREATMENT of patients in groups has become an important modality of psychotherapy due to steadily increasing demands for help with emotional problems in the presence of limited facilities. As we have utilized the method, it has become apparent that group psychotherapy is not merely an expedient substitute for individual treatment, but has unique advantages in its own right. Happily, many of these advantages are not confined to therapeutic groups, but can be attained in other group situations as well. *This is the key to the preventive approach.*

In an attempt to help preserve—as well as restore—the mental health of plant personnel, one of the psychiatrist's chief roles should be in helping set up various "human relations" programs. These may be incorporated into the traditional consultative and training programs of management, or may be set up especially. Thus, supervisors can be trained to be more effective leaders by increasing their sensitiveness to the needs of their subordinates; staff personnel can be helped to deal better with human relations problems; the skills of those who have training responsibilities in industry can be sharpened; key personnel in top management can be helped to work more effectively together, as well as with and through subordinates; and Medical Department person-

nel can be helped to deal more effectively with the psychological aspects of patients' complaints. Unfortunately, at present the psychiatrist's usefulness in this area is being utilized more frequently by forward-looking Industrial Relations and Personnel Departments than by Medical Departments. It is felt, however, that this should be an integral part of the Medical Department's total program to keep the health—both physical and mental—of employees as high as possible.[3,4,5]

The tremendous importance of knowing how to deal effectively with human relations problems is obvious when we consider that in every organization there are individuals at all levels whose primary responsibility is to facilitate the work of others. Supervisors* are concerned with the mobilization and utilization of the productive energies of their subordinates. In addition to possessing technical and administrative know-how, it is imperative that the supervisor be able to work effectively with and through others; his effectiveness is closely related to the extent to which he is free from intrapersonal and interpersonal conflicts. He must have sufficient sensitivity to his own wants and those of others[6] and to the dynamics of group activity, so that he is able to deal effectively with whatever human relations problems arise and to assist in developing a cohesive work unit. To the extent that he lacks these abilities, the difficulties referred to earlier occur.[7] Thus, the bulk of work in industry is done by people who must deal with other people. In spite of this obvious fact, it is amazing how much more money and energy are spent by industry in making sure that machines are kept in perfect working condition than in furthering human relations knowledge and skills.

As has been indicated, it is felt that an industrial psychiatrist can use his time most effectively if he spends the majority of it either working directly on preventive programs such as those to be described, or assisting, in a consultative capacity, members of the Industrial Relations Department, the Personnel Department, or the Medical Department in setting up such programs. The remainder of his time may be spent both in consulting with key individuals on specific human relations problems and in providing the previously-mentioned more traditional psychiatric services.

The line of demarcation between psychotherapy and human relations training is not always a sharp one,[8] but our main interest in training is in helping so-called "normal" people to adjust to the vicissitudes of the industrial setting and to deal with problems which invariably arise *before* major emotional difficulties take place. Industrial personnel involved in these training programs are usually primarily concerned with problems relating to their organization. They may find it difficult to deal with certain people; yet, they may fail to perceive how their own actions frequently militate against the very objectives at which they are aiming. Their preoccupation with such questions as "how to change a person's attitude" and "how to get a person to do things" often prevents a realistic understanding of the human interaction process. They frequently seek manipulative devices which, when applied, deceive very few beside themselves. Preoccupation with their own personal needs often precludes any genuine interest in, concern for, or awareness of, the needs of others. They may be concerned with such problems as how to conduct meetings more effectively, establish better working relationships, build better work teams, take account of the personal needs of subordinates, and reduce intergroup conflict between competing professional and technical sub-groups. To be sure, many of these problems have their roots deeply imbedded in individual personality structures and reflect needs which are not consciously recognized. For many persons, any attempt to bring about better understanding and integration outside of a formal psychotherapy situation would meet with defeat or be unwise. However, there is a substantial number of persons strongly motivated to increase their personal effectiveness and participate in less intense self-evaluative experiences. These persons profit considerably from "training."

Human relations training should not be considered a "cure-all" for organizational problems. Obviously, many factors operate to disrupt the equilibrium of an organization. However, when supervisors possess adequate leadership skills they can help provide an atmosphere in which individuals can solve problems more effectively, and many of the other disrupting forces (e.g., social, economic, etc.) can be minimized. In this regard, it should be remembered that minor personality problems in those persons high in an organization often cause a good deal more trouble than more serious emotional difficulties in those lower down.

The primary objective of these programs is to increase the personal effectiveness of the individuals involved in dealing with problems in human relations. This objective is attained by helping participants gain greater insight into themselves and others, develop a sensitivity to the dynamics of group behavior, become aware of the defense they employ, learn more effective ways of dealing with conflicts and tensions, and implement their understandings with useful skills. The depth or superficiality of the procedure depends on the frequency of the sessions, the size of the group, the degree of motivation and sophistication of the individuals involved, and similar factors. Moreover, the "philosophy," reactions and degree of support of other individuals higher in the organization than the group being dealt with must be considered.[9] The atmosphere and productivity of the training group vary in accordance with whether the meetings are on "company time" or on the individuals' time; whether they are in the plant or away from it; and whether attendance is voluntary or compulsory, no matter how labeled.

*This term is used to designate the individual responsible for a group's activities, whether high or low in the industrial hierarchy.

Although the author has also worked with programs conducted under the aegis of a university, bringing together personnel from different plants, this paper is primarily concerned with describing in-plant training programs. These may be organized with individuals at the same level of the organization or with individuals at different levels. The most frequently utilized program involves the formation of a new group organized specifically for purposes of training. In such groups, trainees are drawn from different areas of a plant, and have no on-the-job relationships with one another. Formal status differences are minimized and frequently participants are essentially strangers to one another at the initial meeting. Another type of group that may be worked with is a "natural" work group; that is, a group that is already functional with a work orientation. This may be a top level staff, a group of line employees and their supervisor, a committee, or a group of supervisors of unequal rank from a given division. In such "vertically-oriented" natural groups supervisors and subordinates are together, and existing status differences usually increase resistance to training since trainees experience greater anxiety when exposing their thoughts and feelings to those with whom they work rather than to strangers. However, such groups—although they move more slowly initially than the type first described—have the advantage that any changes brought about in working relationships are more likely to carry over to on-the-job situations.

Also, since the group continues to function after training, procedures which help the group improve and maintain its efficiency can more easily become an integral part of the organizational activity.[10]

In either case, prior to the actual meeting of the group, the psychiatrist should familiarize himself with the plant setting and the organizational structure.[11] He may find it helpful to have individual interviews with the prospective participants in order to establish some degree of rapport, evaluate motivation for training, and familiarize himself with the particular "jargon," problems, existing relationships, and general work atmosphere in the plant. Since the success of these programs depends crucially on the support of the person with the highest status in the group, it is advisable, when appropriate, to counsel with him prior to and during the administration of the program.

The psychiatrist's chief purpose is to establish an atmosphere in which the participants feel free to express themselves; he attempts to stimulate the free flow of communications between all members of the group. He makes a constant effort to increase the group's interest in—and attention to—its own processes, including the interpersonal feelings which exist, the barriers to communication which arise, and the forces which determine the group's operation. In such a setting, valuable emotional as well as intellectual learnings take place. When appropriate, discussion is supplemented by the use of films, didactic presentations, and "role-playing" (this is a device wherein participants act out various problem situations in dramatic form for evaluation and comment by the rest of the group and the psychiatrist). As problems are discussed, interest frequently develops in such topics as interviewing, counseling, dealing with "difficult" individuals and group leadership.

Groups usually consist of 15 to 30 members and meet weekly for two to three hours for 10 or 12 sessions; or they may continue indefinitely with new members being added as others drop out. As a group develops, and depending on the skill of the psychiatrist, more complex, difficult and comprehensive problems can be included in its activities.

Comment

WHEN working with higher echelons of management, perplexing and persistent problems arise which do not appear on the surface to be "human relations problems." Generally, these are approached from the standpoint of administrative or technical concepts. New perspectives on such problems may be gained, however, through a consideration of the human factors which generate and maintain them. Obviously, the psychiatrist can never duplicate the accumulated experience of the leaders with whom he deals; he can, however, help them apply *their* knowledge more effectively.

Since each participant in turn influences many other individuals, changes resulting from training sessions may easily filter through an organization. What may appear as superficial understanding or insight may often have profound and widespread effects.

As in group psychotherapy, the experience of communicating with a wide variety of individuals in a "permissive" or tolerant atmosphere produces a greater appreciation of individual differences, more insight into oneself and one's impact upon others, and yields a clearer understanding of the bases of success or failure in human relations. The sensitivities and skills acquired help individuals become more effective in group activities, both as leaders and group members. Reports indicate that following training, participants feel comfortable, their tensions are diminished, and their efficiency in the management of manpower is enhanced.

The industrial psychiatrist must exercise careful judgment, and considerable demands are placed on his clinical skills in dealing with the resistances which he inevitably encounters. He must evaluate carefully the amount of anxiety that trainees can absorb and deal with constructively. This evaluation is based on his understanding of the underlying individual and group dynamics.

The importance of effective training activities cannot be overestimated. All too often, individuals rise in administrative hierarchies because of technical competence, but lack the human understanding and skills in establishing constructive relations necessary for adequate job perfor-

mance.[1,2,3] The atmosphere of our industrial society, with its emphasis upon technical knowledge, logic and facts, and the social stereotypes of how individuals ought to, or do, behave leaves little room for training in human relations. The lack of such understanding is the basis for countless frustrations and anxieties which have repercussions on many other people. Supervisors who have failed to acquire such understandings in the process of development have little opportunity to do so, except through programs of the type described here.

Summary

THE INDUSTRIAL psychiatrist can provide important services by widening his scope to include preventive as well as therapeutic activities. In this paper, various training programs which he may supervise have been described. They are directed toward helping individuals in the field of business and industry better understand and deal with "human relations" problems. Even minor changes in the industrial environment brought about by these efforts can have considerable impact upon the emotional well-being and productive capacities of those individuals both directly and indirectly involved.

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Not Enough Young Women

THERE are fewer young women in the population in their late teens and early twenties than there were 10 years ago. Although the female population increased by 10½ million between 1940 and 1950, there was a drop of 722,370, or 11.7%, in the 15- to 19-year age group from which career recruits are largely drawn today. The low birth rate of the depression years is the cause of the present decline in this portion of the population. A gradual increase in girls attaining the age of 18 is expected in the next decade, but not before 1960 will the number of 18- and 19-year-olds exceed the 1940 level. There has been a sharp increase in the number of early marriages and the birth rate has risen in the postwar years. Hence there are more young women with family responsibilities which keep them from taking jobs outside the home, and the labor reserve is accordingly cut down. At best, the labor reserve in the 18-to-34 age bracket is not more than 2.6 million since there are in this high-demand bracket only one million single women and only 1.6 million married women without children who are not already employed. For military service, for nursing careers, and for other vocations which require considerable training, the most preferred are women 18 to 24 and not married. In 1952, the reserve of unmarried women in this younger group who were not in school or working was only 500,000. There simply are not enough young "mobile" women to fill today's jobs and train for tomorrow's.

—From "The Shortage of Young Women Workers," U.S. Department of Labor, *Leaflet* 15.

Goodyear Atomic Corporation

Portsmouth, Ohio

PREVENTION rather than treatment is the idea behind the hospital program maintained by Goodyear Atomic Corporation at the Portsmouth, Ohio, Area Atomic Energy Plant. An industrial medical program, to be successful, must be patterned to the requirements of the particular industry involved, and GAT's hospital program was tailored to the specific needs of a gaseous diffusion plant.

DR. R. M. ANDRE, GAT Medical Director, says the program is one of preventive medicine, broadened and designed for the detection, prevention and medical care of industrial injuries, occupational diseases and such other non-occupational illnesses as may be necessary to preserve the health and well being of industrial workers.

AEC personnel visiting GAT's new hospital: (second from left) James H. Sterner, M.D., AEC Medical Consultant; William Harris, Medical Hygienist, assigned to the AEC's New York Operations office (center) and Ray E. Albert, M.D., Assistant to the Chief, Industrial Health, who is in the Division of Biology and Medicine (fourth from left). The three men are shown in the x-ray room. R. M. Andre, M.D., GAT's Medical Director, right, explains the hospital layout. Left is R. A. Manning, Supervisor, GAT's Industrial Hygiene Department.

The facilities of the hospital, which are open 24 hours a day, are many. Two four-bedroom wards are equipped to serve any temporary needs that may arise. Patients will not remain in the wards during periods of extended illness, as the wards are maintained for emergency use only.

There is a complete x-ray laboratory with dark room and film reading room. These facilities are adequate to serve all x-ray needs, including pre-

The men and women concerned with the health of the employees: GAT Medical Director, R. M. Andre, M.D., (seated center); (first row, left to right) Al Rindler, J. A. Koeingshoff, M.D., R. A. Manning, Dr. Andre, Garnet Webb, C. A. Johnson, M.D., and Nurse Annabelle Sickman. Standing (from left) are Virginia King, Christine Bachulis, Janet Anderson, R. W. Belden, R. E. Booth, J. D. Bowman, W. L. Bradshaw, J. O. Zoellner, V. I. Cornett, R.N., Helen Lewis, R.N., and L. E. Egbert, R.N.

placement, chest x-rays and examination of all bony structures. A clinical laboratory is equipped for complete chemical and microscopic examinations of the urine, blood, serum, and such other tests as may be required.

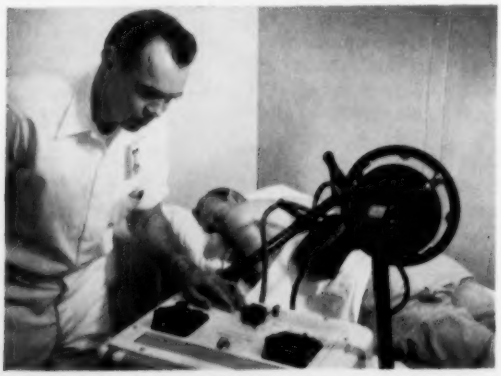
There are first aid treatment rooms for the care of injuries and illnesses as well as special rooms for physiotherapy, etc. Various rooms provide ample space for conducting special tests, such as hearing, eye, heart, and lung tests. An emergency operating room has been provided and is equipped to care for all minor and most major industrial injuries not requiring a long period of hospitalization. The fire department

Treatment for a hand injury.

The Medical Department of Goodyear Atomic Corporation in its new quarters. Employees wait their turn in the waiting room.

In the hospital laboratory (foreground, left) Dr. J. A. Koeingshoff; L. E. Egbert, R.N., and R. E. Booth, X-ray and Laboratory Technician.

The whirlpool treatment.



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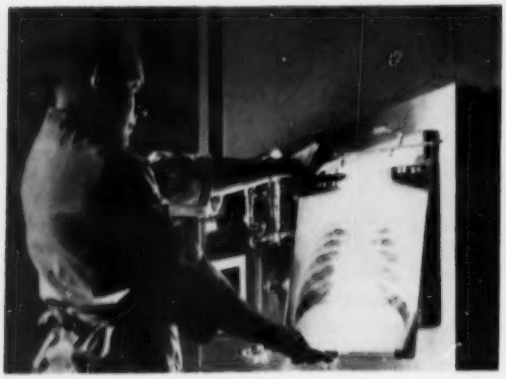

A newly developed x-ray film.

Chest x-ray.

Every employee, if he works where there is excess noise, is given a hearing test.

An eye examination is given all employees prior to their being placed on payroll.

maintains an ambulance on a 24-hour schedule.

The hospital also contains ample room for physicians' offices, records space, showers, and locker space for hospital personnel.

The department of industrial hygiene is located in the medical subdivision. Its function is to make surveys of the plant to insure and maintain continued safe working conditions against technical hazards.

The preventive emphasis of GAT's medical program is shown in the comprehensive pre-employment examination required by Goodyear Atomic Corporation. Prospective employees are given a thorough examination of eyes, ears, heart, lungs, blood, urine and other tests as are needed to detect disabilities. This complete examination assists in the proper job placement of the employee.

"The program we have," DR. ANDRE said, "is, in our opinion, one that meets the demands of Goodyear Atomic Corporation and affords ample protection and medical care for its employees."

"M.D."—Not "Dr."

IN THESE years when more and more individuals are earning degrees of Doctor of Chiropractic, Doctor of Osteopathy, Doctor of Philosophy, Doctor of Divinity, Doctor of Dental Surgery and Doctor of Medicine—not to mention the dozens of unearned honorary doctorates—the term "Doctor" or "Dr." is fast losing its meaning and significance. The medical profession must retain its identity and individuality, but cannot unless physicians themselves discontinue using the term "Doctor" whenever and wherever possible. Physicians, upon graduation, are awarded the degree which is officially abbreviated "M.D." Let's remember that we are M.D.'s and let's use our degree to identify ourselves whenever our names appear in print or in writing. On professional cards, signs on office doors and windows, stationery, announcements, prescription blanks, yes, everywhere, have your name printed with the M.D.; sign your name with the M.D. People will then know that you are a physician, not a Ph.D., anything-else-D., or what have you. Remember, also, to say "physician" or "surgeon" whenever possible in conversation, and you will be surprised how seldom it is necessary to say "doctor." Our prestige will be enhanced as members of the medical profession if we will follow these suggestions.

—*J. Florida M.A.*, September, 1954, quoting *Rocky Mountain Med. J.*

AMA Congress on Industrial Health

THE FIFTEENTH Annual Congress on Industrial Health, sponsored by the Council on Industrial Health of the American Medical Association and the Medical Society of the District of Columbia, convened in Washington at the Shoreham Hotel January 25 and 26. The General Chairman of the sessions was Dr. William P. Shepard, Chairman of the Council. Other current members of this AMA Council on Industrial Health are: Warren F. Draper, Henry H. Kessler, Oscar A. Sander, Lloyd E. Hamlin, Robert A. Kehoe, M. N. Newquist, J. H. Sterner, R. T. Johnstone, L. C. McGee, and C. F. Shook. Unofficially perhaps as many as several score other organizations and committees concerned with industrial medicine, industrial hygiene and occupational health in general conducted their affairs under aegis of the AMA Council, and for many the time period was from January 22 through 28. No condemnation may be attached to the practice of multiple assemblies. In no sense are these cognate groups parasites or barnacles. The need is for some new term larger than "congress," "convention," "assembly," or "conference." The Washington meeting was a veritable constellation or galaxy of meetings all to the one objective—the promotion and conservation of the health of the industrial worker. The Council on Industrial Health precisely is so termed since in finality a council is more important than all other species of assembly. It is made up of persons invested with the highest authority, who, in their consultations do not so much transact ordinary concerns as arrange the forms and fashions of things. This AMA Council did and does just that.

Usually in these annual congresses there is an announced key topic upon which all major deliberations focus. This year the key topics were submerged but no less were palpable. One of these was the unremitting insistence that much of the future of industrial medicine depends upon the general practitioner of medicine and conversely that this general practitioner of all physicians is only gropingly aware of his high responsibility. A second key topic cautiously extruded was that despite endless worthy protestations to the contrary as a generality, there is a need for more governmental participation at the national level in occupational health pursuits, and notably as to research.

This may be exemplified in the research on radioactive isotope applications in and out of medicine. It is unthinkable that any one county or even state medical society might undertake to formulate its own restrictive measures of control, and contrawise such measures require national uniformity and under the surveillance of governmental enterprise.

REDUCED to the form of the epigram but here unofficial, the outpourings of the Congress in feeling, if not in pronouncement, require focus on these points:

1. A future success state for occupational health depends more upon the general practitioner than upon the specialist in occupational health.

2. Better professional relations as to occupational health sorely are needed because of the perpetuation of traditional disaffection for this form of medicine—chiefly the product of unfamiliarity

Among those at the Presentation of the Distinguished Service Citation (see page 136.)

Left to right: R. Lomax Wells, M.D., Board of Directors, Industrial Medical Association; Robert C. Page, M.D., Chairman, Board of Trustees, Occupational Health Institute; O. A. Sander, M.D., Council on Industrial Health; A. F. Mangelsdorff, M.D., Board of Directors, American Academy of Occupational Medicine; Helen Auth, Medical Technologist, Employee Health Service, National Institutes of Health; and M. H. Manson, M.D., Medical Director, American Telephone and Telegraph.

with occupational health objectives and procedures.

3. The opportunities and needs for investigative work as to occupational health are tremendous and exceed all facilities now available.

4. Widespread minor neuroses and other lesser mental states among industrial workers may at this time constitute the foremost area for achievement in occupational health.

5. The advent of atomic energy constitutes an undeniable revolution involving all of human life and particularly scientific enterprise with ramifications into occupational health.

6. More than ever the highest gains for occupational health will derive from concertive functioning of the field's team of the physician, the industrial hygienist, the industrial nurse, and the safety engineer rather than from diversion of enterprise through isolated functioning.

7. Occupational health has now assumed international proportions with every industrial nation having its needs, thus presaging expanding activities for international organizations such as the International Congress on Industrial Medicine and the World Medical Association.

8. Industrial management long credited with inertia and resistance to occupational health enterprises may in truth now be ahead of the medical professions in foresight and in demand for services.

9. Educational facilities in occupational health at the university level, while far from perfect as to content, are currently in excess of demands for training.

10. It is increasingly evident that industrial Medical Directors more than at any previous time are being afforded connections with universities in teaching capacities thus providing instruction immediately deriving from industrial experience. Conversely the fact emerges that increasing numbers of medical and teaching hospital staffs serve as consultants to industry in the promotion of occupational health.

11. Specialty certification for occupational health in immediate prospect will enhance the status of physicians in industry.

12. Within the galaxy of national institutes of health, an institute of occupational health might be expected to make notable contributions.

THIS over-all appraisal of the status of health in industry emerges from well balanced programs featured by such major addresses as:

"Medicine in an Industrial Society" as delineated by Stafford L. Warren, Maxwell C. Weaver, Leonard A. Scheele, A. J. Hayes, and Walter B. Martin, with appropriate viewing of management, labor, the governmental agency and the medical profession.

"Occupational Health—Major Factor in Community Health," which sessions were constructed about self inquiries as to "What are the immediate needs for betterment as to industrial hygiene, industrial nursing, industrial medicine, and governmental health agencies?"

Left to right: Otto Tod Mallery, Jr., M.D., Director, Institute of Industrial Health, University of Michigan; Mrs. W. P. Shepard; W. P. Shepard, M.D., Chairman, Council on Industrial Health, American Medical Association; and Robert A. Kehoe, M.D., Council on Industrial Health.

A significant session, disclosing its area in the title "Improving Communications Between Medicine, Management and Labor," foremost among the participants being Drs. Elmer Hess, William P. Shepard, Carl M. Peterson, and Warren F. Draper.

Other sessions were directed to medical care and injury compensation in industry, the import of atomic energy to industrial medicine and community health, civil defense and disaster programs, and occupational rehabilitation and disability.

At the Annual Banquet the featured address was "Man and His Work—A Discussion of Emotional Pressures and Problems of Executives," by Dr. Francis J. Braceland.

Dr. Harold A. Vonachen, Medical Director, Caterpillar Tractor Company, was presented the Award of the President of the United States as an outstanding contributor to the employment and well-being of the nation's physically handicapped men and women.

The Distinguished Service Citation

PRECEDING the formal opening of the Fifteenth Annual Congress on Industrial Health, Dr. Walter B. Martin, President of the American Medical Association, presented the Distinguished Service Citation to the Occupational Health Program of the Public Health Service, U.S. Department of Health, Education, and Welfare, for its outstanding contribution to the protection and improvement of worker health.

The award was given during a testimonial dinner held by the Council on Industrial Health of the American Medical Association for the Program and its past and present Directors. Dr. Seward E. Miller, who had directed the Occupation Health Program for the past five years, accepted the award in the name of all those who had been associated with this activity in its 40 years.

The past and present history of the Program was briefly recounted by Dr. Royd R. Sayers, who had served as Chief during 1934-40, and Dr. Miller, respectively. Dr. William P. Shepard, Chairman of the Council on Industrial Health, reviewing the need for increased occupational health activity in the face of unprecedented industrial expansion, described what he hoped the future might hold for the Program.

"It seems to me that the story we have heard brought out several things which could not have been done by other than a governmental agency. Some of these things are of utmost importance to any nation and are primarily essential to the nurture of our most valuable asset—manpower. We need far greater facilities for meeting these responsibilities, and I wonder if there could not be a Federal Institute of Occupational Health in which such work could be done. I wonder if government has a greater challenge anywhere else than the protection of the 60 million workers in this country. With the atomic age upon us, I feel that we cannot wait any longer."

The Program Directors whose accomplishments were honored, ranging from past to present, included Dr. Joseph W. Schereschewsky, Dr. Anthony J. Lanza, Bernard J. Newman, Dr. William J. McConnell, Dr. Lewis R. Thompson, Dr. James P. Leake, Dr. Royd R. Sayers, Dr. Paul A. Neal, Dr. James G. Townsend, Dr. Seward E. Miller, and Henry N. Doyle.

Among the distinguished guests were Dr. Leonard A. Scheele, Surgeon General of the Public Health Service; Colonel B. Dixon Holland, of the Office of the Surgeon General of the Army; Major General Dan G. Ogle, Surgeon General of the Air Force; Captain L. B. Shone, of the Department of the Navy; Dr. R. C. Page, President of the Industrial Medical Association; and Dr. Warren F. Draper, of the United Mine Workers of America Welfare and Retirement Fund.

Presentation of the Distinguished Service Citation to the Occupational Health Program of the Public Health Service, U.S. Department of Health, Education, and Welfare. Left to right: Dr. Walter B. Martin, President of the American Medical Association, Dr. Seward E. Miller, Chief, Division of Special Health Service, and Dr. Leonard A. Scheele, Surgeon General of the Public Health Service.

ALSO present were the following members of the Advisory Committee to the Public Health Service on Occupational Health: Dr. Robert A. Kehoe, Director, Kettering Laboratory and Institute of Industrial Health, University of Cincinnati College of Medicine, and present Chairman of the Committee; A. J. Hayes, President of the International Association of Machinists, AFL; Marion E. Martin, Commissioner of Labor and Industry, State of Maine; T. Marcus McClellan, Vice-President of the Birmingham Paper Company; Harry Read, Secretary of the Committee on Safety and Occupational Health, CIO; Dr. William A. Sawyer, Chairman of the AMA Committee on Medical Care for Industrial Workers; Mrs. Mildred D. Thomas, Supervisor of Nursing Service of Merck and Company, Inc.; and Dr. William P. Yant, Director of Research and Development, Mine Safety Appliances Company.

During the two-day Congress, the Advisory Committee to the Public Health Service on Occupational Health served as a consultant panel for one of the three broad discussion groups into which the conference divided itself. This group was concerned with occupational health as a major factor in community health, and covered such subjects as the status of the health of the working population, industrial medicine and the economics of medical care, and the improvement of communications between medicine, management and labor, in relation to both industrial medicine and general health care.

Impressions and Attitudes

NORBERT J. ROBERTS, M.D.
Medical Director, Pennsylvania Railroad

COULD a company have real confidence that offering its employees a good industrial medical program would influence their attitude toward it significantly? Put yourself in the employee's place while we illustrate briefly our concept of some of the desirable features of such a program, and try to imagine how your attitude toward your company would be influenced by the following experiences:

1. As an applicant for employment you are told that a medical examination is a part of the entrance procedure—a private confidential measurement of the status of your health to make sure that you are medically able to perform the duties to which you are to be assigned without hazard to yourself or others.

2. On this impressionable first day you are greeted courteously in the Medical Department with real evidence of sincere interest. You are handled promptly, and in the course of your visit the essence of the company's medical policy is made clear to you. You are told that the theme of the medical program is to help you and your personal physician to keep you healthy, that your relationship with the physician in the company's Medical Department will be confidential, and that his primary interest will be your medical welfare. You are reassured to find the program fundamentally one of preventive medicine practiced for your benefit rather than one supplying merely first aid or serving as a police arm of management.

3. You note that your surroundings in the Medical Department are friendly, in good taste, clean, and modern, and that the medical personnel seem to be happy in their work—all evidence of your new company's respect for the services rendered by its medical staff.

4. The doctor who examines you is neat, personable, patient, and obviously competent and thorough. From your contact with him, the nurses, and the technicians, it is evident that the company has attracted and employed high-caliber professional people. You are impressed by the fact that the doctor, after this first examination as after all subsequent ones, tells you and discusses with you the results of his examination, answering clearly what questions you pose him—though he seems to foresee most of them. Perhaps you have a minor uncorrectible defect which caused your rejection for employment elsewhere, and he assures you, after noting it, that it will not interfere with or be aggravated by your work. He invites you to come back for thorough health maintenance examinations periodically, offering to report his findings to your personal physician and to work closely with him in the preservation or improvement of your health.

From "Horizons of Industrial Medical Services," presented at the Nineteenth Annual Meeting, Industrial Hygiene Foundation, November 18, 1954; to be published later, in full text, by the Foundation.

5. You learn that your company makes available to you in the form of a contributory benefit, as a supplement to its medical service, a well-arranged, well negotiated insurance program to help meet your expenses and those of your family in the event of any appreciable expenditures for medical, surgical, or hospital services.

6. You discover that the company maintains in its Medical Department a team of specialists in industrial hygiene, men with a high degree of technical training in the recognition, and in collaborating on the elimination, of any hazards to the health of employees, customers, or community residents. Even more important, you find your company consults these men when it is considering constructing or buying new buildings or equipment, or initiating new processes or altering old ones, in order that from the earliest planning stage not only may hazards or annoyances be avoided, but that even under certain circumstances positive contributions may be made to the maintenance or improvement of health.

7. Even your family seems to enjoy better health as a result of the palatable propaganda to which you've been subjected subtly by the Medical Department's health education program, and particularly because of the new health-consciousness and health maintenance know-how you've gained from your personal interviews with the Medical Department physician during and after your regular examinations.

8. You note that few of your co-workers are injured, and you appreciate that the Medical Department has assisted Management and the safety people in keeping the incidence of accidents low by its contribution to the proper placement of employees, and by helping to keep the distraction of physical or mental ill health from predisposing to or causing accidents. But you note with comfort that when an employee *is* hurt, he receives immediate and sympathetic medical treatment in the facilities and with the skill required by the injury. You can't fail to see the sincerity of the company's concern to provide every requirement for maximum recovery and rehabilitation of the injured employee, and for his just compensation for the injury. Later you are impressed by the tenacity with which the effort is pursued to return the injured employee to his regular work, or to duties he can perform within the limits of his residual abilities. In this, as in the absorption into the company of handicapped new employees, you can't help being amazed by the extent and accuracy of the Medical Department's doctors' knowledge of the demands made on the worker's body and mind by the jobs in your company, knowledge gained by thorough analysis from the medical viewpoint of the requirements and environments of the various assignments.

9. Many things affect you, or will affect you, without their yet being within your sphere of aware-

ness. Your attitude towards your new company is incomparably better than it was on your last job for many reasons, but you couldn't be expected to realize yet the favorable effect that a physician's advice has had on your firm's policies and attitude towards *you*, towards your value and dignity as an individual employee, and toward the other individuals who own, manage, work for, patronize, or even simply have an attitude about your company. As a matter of fact, you may never learn how its Management, which long ago began to weigh carefully and benefit from the counsel of staff technical specialists, came eventually to value having directly available to it at its own policy-making level, and not through channels, the counsel of a wise physician. The purpose of Management in inviting his advice was to supplement that already available to it on matters of human relations with the opinions of one whose primary interest, training, and experience have led him to accumulate considerable knowledge concerning the moods, motivations, reactions and requirements of the *individuals* who are the subjects of the whole science of human relations. Certainly his contributions may have assisted your company in achieving the cooperative, friendly, and effective relationship which it enjoys with the labor organization representing you, and to which, incidentally, you probably owe more than a little credit for the fine attitude your company takes toward you. Your Management probably already has reason to respect the potential value of the doctor's counsel upon subjects with such human relations aspects as policies and procedures affecting employee health, employee safety and working conditions, employee incentives, benefit plans, insurance and retirement programs, employee placement, employee productivity, the selection and training of supervision, executive development, and possibly even public relations and advertising.

10. You are destined to profit from the favorable influence that the good health of you and your family will have upon your community and its economy, and in eventually helping to turn the tide of the whole practice of medicine from the curative to the far-more-desirable preventive phase.

11. It will not be until many years later that you will profit from the significant role the Medical Department plays in your company's program to prepare you for retirement.

Now, if you were the employee enjoying the benefits of the above-described medical program, what effect would this, other things being equal, have upon your attitude toward your employer? If your reaction parallels that of most individuals, perhaps you would be willing to advise your company's Management to consider seriously a proposal to offer such a service to its employees now if it is not already doing so. If you are yourself a member of Management, and will reflect upon the yield from the last increase in your labor costs, the possibility of enjoying a several-fold return upon this investment should surely appeal to you. But even if for some reason you decide not to offer such a service now, you need not be discouraged if you later find yourself paying for a similar one being supplied your employees by their labor organizations, for if it is done as well as some are doing it, you will still be spending your money wisely. You might *not* enjoy, however, seeing the credit for the happy effects of the program on employee attitude accruing to the unions instead of to your company, and your directors might join in wishing that it could have been otherwise.

"Big Ears—Small Mouth"

GLADYS D. MEYER, Manager
Personnel Services Division
White-Rodgers Electric Company
St. Louis

MUCH that is being written about counseling is feckless—too many generalities and no earthy guidance; nothing that may be turned to prompt account tomorrow or today. Here's an article that is different. The three cases swiftly move right into the core of the difficulty and then right out in terms of dispelling the evil. A few minor changes have been made, but the article remains sound counseling—ED.

MARTHA had a personal problem. She regarded it as so very personal that she hugged it to herself for six long weeks, and in those six weeks a lot of strange things happened to her. Martha was a production worker, and her production dropped off 20%; her best and almost her only friend became estranged, and for the first time in a rather long association her foreman had to have a talk with her about production and attitude and something he called "wool-gathering."

The shy Martha lived with and supported a widowed mother who had recently had a stroke and was bed-fast, and with an old great-aunt who looked after the mother while Martha was at work. Martha, her aunt and her mother lived two blocks from the nearest telephone and Martha was greatly concerned lest her mother have another stroke and valuable time be lost in calling the doctor, and in calling her if she were at work. She wanted very much to have a telephone installed, but in Martha's area, at this time, that wasn't easy.

She went down to the telephone company. They were very courteous. They had a talk with her, and gave her a leaflet to read and told her to send in a letter explaining the circumstances of her need.

Now oddly enough, when Martha's real problem was brought to light it was found that it wasn't the problem of whether she would get a telephone. It had never occurred to her that perhaps she wouldn't. Martha's immediate problem, the thing that had her off base, was that *letter*, because she just couldn't write it. She could tell you in very good English what needed to be said in the letter, but she couldn't put it down on paper. Said Martha, "I don't suppose I've written more than six letters in my life, and some of those were to Santa Claus when I was a little girl."

If we say, "That's the silliest problem and the stupidest girl I ever heard of: anybody can write a letter!" we are a little wrong—about 100% wrong. No problem is a "silly" problem which reduces one's earnings 20%. Martha is not a stupid girl, she is a little above average, and not everyone—even intelligent ones—can write letters.

We do not brand as stupid those people who can't drive automobiles, if there has been no need or occasion to drive an automobile. There had been no need or occasion for Martha to write letters.

In helping people solve their personal problems—and this is perhaps the most important point to re-

This article appeared under the title "Martha, Mary and John Each Had a Personal Problem," in *Personnel Journal*, December, 1954, and is republished here by special permission.

member—we must have a respect for the other fellow at *his own level* of development. And let's not confuse level of development with level of intelligence, because they aren't always the same thing. Martha's level of development simply did not include the writing of letters.

But it does now! For Martha wrote the letter to the telephone company. Actually, she wrote several before an acceptable one was painfully achieved.

Of course it would have been cheaper, quicker and easier to have written and sent the letter for her via company steno, letterhead, envelope, mail services and mail meter. But by so doing nothing would have been accomplished toward the development of Martha's capacity to solve her own problem.

One concern of a good counselor must be the development of capacity. Thus some part of the solution of every problem must always be left for the counselee to handle, no matter how inadequate he may seem to be. The counselee who can handle a small part of today's problem, can handle a larger part of the one that comes along tomorrow and thus grow in capacity. We define counseling in business and industry as an attempt to *help* an employee solve his problems, not to solve them for him.

Mary

AND THEN there was Mary. Mary had a personal problem. Unlike Martha, Mary was an extrovert. Mary said "My husband has run off with another woman. Not only that, he borrowed 50 dollars from my father to take her to Arkansas. And not only *that*, he bought a new suit to wear on the trip and charged the suit to me." And then Mary grinned.

The counselor grinned back and said, "Goodness Mary, you have a lot to worry about, don't you? A lot of problems." And Mary answered, "Problems? I don't have any problems. And I'm not worried about a thing except do I have to pay for that suit. Do you know a good, cheap lawyer?"

In helping people solve their personal problems we need to remember that we do not all see things through the same glasses. We need to cultivate objectivity so that our own emotions and biases do not get involved in the problem under consideration. Such involvement puts on us glasses so different from those of the counselee that we are likely to see nothing but a confused blur instead of the clear-cut problem.

John

CONSIDER the "tragedy" that hit John. John's problem left him sleepless for two nights and distracted for two days. In his own hushed, unhappy words (spoken in strictest privacy) it was "the worse thing I ever got into." John had had a contractor out to look over his lovely home with a view to replacing some roof tile, doing some tuckpointing, etc. "He tells me I have *termites* in the front porch. What in the world am I going to do?"

The real problem for the counselor in John's dilemma was not *what* to do but *how* to do it. In John's background and environment there were words one didn't say out loud (like "cancer" or "mental illness") and afflictions one didn't have (like termites or impetigo).

Knowing this, one could have the proper sympathy for the seemingly infantile attitude of this civic-minded home owner, who had a very responsible job.

One could solve the problem, not by giving John the phone number of a good exterminator, but by referring him to someone in his own organization whom he respected, who had greater status than he (job, and otherwise) and who had successfully coped with this earthy problem.

The resourceful counselor learns that background information about a counselee, via his personnel and or other records, sometimes yields valuable clues as to how one may best help him handle a problem; not clues to a solution, perhaps, but instead clues to a method.

The resourceful counselor will look for help within his own organization and make referrals to those qualified to help. The best help is not necessarily all the way across town. It may be in the department next door.

Such referrals, properly handled, can produce a fine "all-in-the-family" feeling.

The honest counselor, after many Marthas, Marys, and Johns, will acknowledge that some of the most brilliant successes attributed to him actually involved nothing on his part except listening sympathetically. There is sometimes sufficient therapy in the catharsis of getting a worry off one's chest so that nothing further is required. For this reason there seem to be only two essential physical characteristics necessary for good counseling—namely, big ears and a small mouth!!

From the Archives

IN 1906, according to Dr. Mock, Dr. Frank Fulton, of Providence, Rhode Island, began a physical examination of employees among the workers in a large saw factory. This he did free of charge for the purpose of discovering tuberculous workmen. Dr. Mock undertook the examination of the employees of Sears, Roebuck & Company, Chicago, in 1909, and refers to reports setting forth the benefits of this practice, by Dr. Irving Clark, of the Norton Grinding Company, Worcester, Massachusetts; Dr. Otto Geier, of the Cincinnati Milling Machine Company; Dr. Wilbur Post, of the Peoples Gas Company, Chicago; Dr. C. G. Farnum, of the Avery Company, Peoria, Illinois; Dr. S. M. McCurdy, of the Youngstown Sheet and Tube Company, Dr. D. B. Lowe, of the B. F. Goodrich Company. A splendid symposium was presented before the National Tuberculosis Association in 1914, and at present writing physical examination of employees, in spite of considerable opposition at first, has been found most beneficent to workers afflicted with all forms of diseases, which when discovered in their incipiency can be checked.

—From "Industrial Health," edited by GEORGE M. KOBER and EMERY R. HAYHURST, P. Blakiston's' Son & Company, Philadelphia, 1924, page ii.

Industrial Medical Association

President's Page

COMMUNICATION on a down-to-earth realistic basis in a conscientious effort to appreciate and understand each other's views was truly exemplified at the AMA's Fifteenth Annual Congress on Industrial Health, January 23-26, at Washington, D.C. Management was represented only at the speaker level. Labor's spokesmen were terse and factual, and stated their case in a most understandable manner. The medical profession turned out in splendid form. The Directors of the Industrial Medical Association, with but one exception, participated in a joint meeting with the AMA Council on Industrial Health. Representatives of the Industrial Nurses' Association and the Industrial Hygiene Foundation also participated. Leading spokesmen for the AMA Government Health Services and labor agreed that more people need competent medical care. Plans are under way for the establishment of a joint committee to consolidate present thoughts and develop new ones pertaining to the health needs of the employed person and his family. The administration of health centers sponsored by both labor and management was the subject of a lively discussion.

THE IMA Directors were on hand for the presentation of the OHI Certificate of Health Maintenance to the National Institutes of Health, a Bureau of the Public Health Service, in recognition of the excellence of its employee health program. The IMA Directors' meeting, the first to be held in accordance with the newly established decentralization policy, proved to be a lively affair. Each Director had time to express his views, thereby broadening the scope of the potential of the IMA in employee health matters. Through the Directors as spokesmen for the various committees under their charge, opinions from committee level were relayed direct to the Executive Committee. The Committee on Standards has accomplished a forthright job, which will facilitate the accreditation program of the OHI to a marked degree.

A MEETING of the Interim American Board of Occupational Medicine also took place. As a representative of the IMA to this Board, I am pleased to report that all preliminaries have been completed and soon the final steps will be taken to make occupational medicine an acknowledged specialty. As previously noted in this Journal, the specialty—occupational medicine—is to be on equal status with the specialties of public health and aviation medicine, all three to be included under the broad specialty heading of "preventive medicine." An interesting task for the Interim Board will be to determine those who are eligible for direct certification under the "grandfather" clause. Plans are already under way to evaluate candidates in a manner which should prove satisfactory to all concerned.

WITH realization of the fact that the physician's job in industry no longer is confined to services associated with the after-care of accidents, managements should soon be doing a more constructive job in dealing with the many complicated aspects of health problems which confront them daily. Existing medical policies will be re-evaluated, with the qualified physician in industry actively participating. When all of this comes about, there will be among all concerned—management, labor, and the family doctor—a true appreciation of the value and significance of a well-organized, economically-sustained, constructive health maintenance program for those employed.

IT IS HOPED that representatives of both management and labor will be on hand at the 1955 Health Conference which is to be held in Buffalo, April 25-30. Time was when physicians considered it a great compliment to themselves to have management representatives in attendance at their meetings. Medicine in industry, however, has now come to such importance that both management and labor are well-advised toward such attendance in order to listen and learn; the Buffalo Program offers many opportunities for both to do both.

Industrial Medical Association

Change of By-Laws

RECOMMENDED by the By-Laws Committee, approved by the Board of Directors, and to be voted on at the Annual Meeting, April 27, 1955:

Article 16, Section 2 of the By-Laws of the Association reads as follows: "Fiscal year: The fiscal year of the Association is to be from January 1 to December 31."

Because the fiscal year of the Association is from September 1 to August 31, by action of the Executive Committee which met on October 18, 1952, it is recommended by your Committee that Article 16, Section 2 of the By-Laws be changed to read:

"The fiscal year of the Association is to be from September 1 to August 31."

(This change does not affect calendar year of dues payments, but merely provides for fiscal year period of accounting.)

Nominees

THE BOARD of Directors of the INDUSTRIAL MEDICAL ASSOCIATION, as provided in the By-Laws, have nominated one candidate for each of the offices of President-Elect, First Vice-President, Second Vice-President, Secretary, and Treasurer. The present President-Elect, KIEFFER DAVIS, M.D., will automatically succeed to the office of President at the conclusion of the Annual Meeting in April at Buffalo. At the Annual Business Meeting, April 27, the following nominees, whose pictures appear on the next page, will be voted upon: E. S. JONES, M.D., for President-Elect; JEROME W. SHILLING, M.D., for First Vice-President; H. W. LAWRENCE, M.D., for Second Vice-President; H. GLENN GARDINER, M.D., for Secretary; EDWARD C. HOLMBLAD, M.D., for Treasurer.

As further provided by the By-Laws, the Nominating Committee has reported two candidates for each of the vacancies on the Board of Directors for the years 1955-57. Six Directors are to be elected for this term. The pictures of the 12 nominees appear on page 143. These candidates will be named on the prepared ballot; however, further nominations may be made from the floor and may be written on the ballot.

All of the men nominated have demonstrated their interest in the INDUSTRIAL MEDICAL ASSOCIATION and also their willingness to work to promote the cause of the Association. There is good geographical distribution, and representation from the component groups.

Biographies

HERE are brief biographical notes on each of the nominees for IMA Directorships:

WILLIAM HARVEY CRUICKSHANK, Medical Director, The Bell Telephone Company of Canada, Montreal, Canada; M.D., D. Psych., D.P.H., University of Toronto, 1936; IMA Member, 1943; Fellow, 1953; District Counselor, 1953-55.

WIRT A. DAWSON, Assistant Physician-in-Charge, Rouge Plant, Ford Motor Company, Detroit; M.D., Wayne University, 1926; IMA member, 1943; Fellow, 1952; Vice-President, Michigan Industrial Medical Association, 1951-52.

CARL U. DERNEHL, Medical Director, Texas City Plant, Carbide and Carbon Chemicals Company, Texas City, Texas; M.D., University of Wisconsin, 1938; IMA member, 1947; Fellow, 1952; Membership Committee, 1952-54, Chairman, 1954-55; District Counselor, 1951-55.

DANIEL E. DORCHESTER, Sturgeon Bay, Wisconsin; industrial medical services for various companies; M.D., Northwestern University, 1931; IMA member, 1937; Fellow, 1952; Membership Committee, 1953-54; Central States Society of Industrial Medicine and Surgery, Governor, 1951-53, 1954-55; Chairman, Committee on Industrial Health, State Medical Society of Wisconsin, 1946-54; Chairman, Council of Medical Service, State Medical Society of Wisconsin, 1953-54.

E. KERN LINDER, Medical Director, The Atlantic Refining Company, Philadelphia; M.D., Temple University, 1933; IMA member, 1943; Fellow, 1953; Membership Committee, 1954-55; Treasurer, Industrial Medical Association of Philadelphia, 1950-53, Director, 1954; Past Chairman, 1952, API Medical Advisory Committee; Industrial Health Section, Philadelphia Chamber of Commerce.

C. SCOTT MCKINLEY, Medical Director, Bakelite Corporation, Bound Brook, New Jersey; M.D., University of Pennsylvania, 1938; IMA member, 1941; Fellow, 1948; President, Industrial Medical Association of New Jersey, 1950; author of numerous articles on industrial health.

WILLIAM DAGGETT NORWOOD, Medical Director, General Electric Company, Richland, Washington; M.D., McGill University, 1935; IMA member, 1952; Fellow, 1954; Regional Consultant, Occupational Health Institute, 1954-55; Diplomate, National Board, 1936.

JAMES I. ROBERTS, Medical Director, New England Power Service Company, Boston; M.D., Tufts College, 1932; IMA member, 1939; Fellow, 1942; District Counselor, 1953-55; past officer, New England Industrial Medical Association.

JOHN F. SHRONTS, Medical Director, General Mills, Inc., Minneapolis; M.D., Northwestern University, 1936; IMA member, 1946; Fellow, 1952; Membership Committee, 1947-48; Public Relations Committee, 1952-53; District Counselor, 1954-55; Central States Society of Industrial Medicine and Surgery, Governor, 1948-50, Program Co-chairman, 1953-54.

ROBERT M. WATROUS, Plant Physician, Abbott Laboratories, North Chicago, Illinois; M.D., Northwestern University, 1936; IMA member, 1941; Fellow, 1952; Chairman, Section on Toxicology, annual meeting, 1951; Chairman, Committee on Toxicology, 1951-54; Member, Committee on Merit in Authorship Award, 1954-55.

VINCENT T. WILLIAMS, Medical Director, Fisher Body, and Sheffield Steel, Kansas City, Missouri; M.D., Washington University, St. Louis, 1928; IMA member, 1941; Fellow, 1942; Publications and Editorial Committee, 1954-55; past officer, Industrial Medical Association of Kansas City.

REX H. WILSON, Medical Director, B. F. Goodrich Rubber Company, Akron, Ohio; M.D., Ohio State University, 1935; Diplomate, American Board of Internal Medicine; IMA member, 1942; Fellow, 1947; District Counselor, 1953-55; President-Elect, Industrial Medical Association of Pittsburgh, Fellow, American College of Physicians; Fellow, American Academy of Occupational Medicine.

Industrial Medical Association

Kieffer D. Davis, M.D.
Phillips Petroleum Corporation
To become IMA President at Annual Meeting

E. S. Jones, M.D.
Lever Brothers, etc.
Nominee for IMA President-Elect

Jerome W. Shilling, M.D.
Pacific Telephone & Telegraph Company
Nominee for IMA First Vice-President

H. W. Lawrence, M.D.
Procter & Gamble
Nominee for IMA Second Vice-President

H. Glenn Gardiner, M.D.
Inland Steel Company
Nominee for IMA Secretary

Edward C. Holmblad, M.D.
Nominee for Treasurer
Industrial Medical Association

Industrial Medical Association

Nominees for the Board of Directors, 1955-1957 (Six to be elected)

Harvey Cruickshank, M.D.

W. A. Dawson, M.D.

Carl U. Dernehl, M.D.

Daniel E. Dorchester, M.D.

E. Kern Linder, M.D.

C. Scott McKinley, M.D.

William D. Norwood, M.D.

James I. Roberts, M.D.

John F. Shronts, M.D.

Robert M. Watrous, M.D.

Vincent T. Williams, M.D.

Rex H. Wilson, M.D.

Association News

The Railway Surgeons

THE SIXTY-SEVENTH Annual Meeting of the American Association of Railway Surgeons will be held at the Drake Hotel, April 12-14, 1955. The scientific program will allow frequent intermissions for inspection of the technical exhibits; and at 1:45 P.M. on Wednesday, the Association members will hold their business meeting for the election of officers. The program is as follows:

Tuesday Morning, April 12

DERMATITIS in the Railroad Industry"—JOHN B. HAEBERLIN, JR., M.D., Chicago; Clinical Assistant Professor of Dermatology, University of Illinois; Chief of Dermatology Section, Presbyterian Hospital; Associate Consultant Dermatologist, Illinois Central Railroad.

"Changing Concepts in Bowel Obstruction"—WILLIAM C. BECK, M.D., Sayre, Pennsylvania; Clinical Professor of Surgery, Hahnemann Medical College, (Affiliate Faculty); Visiting Lecturer in Surgery, Graduate School of Medicine, University of Pennsylvania; Associate Surgeon, Guthrie Clinic and Robert Packer Hospital; Company Surgeon, Lehigh Valley Railroad.

"Treatment of Fractures of Upper Tibia"—W. K. WEST, M.D., Oklahoma City; Consulting Orthopedic Surgeon, Chicago, Rock Island & Pacific Railroad; Professor, Orthopedic and Fracture Surgery, University of Oklahoma.

"Hazards of Radiation"—PAUL W. GREELEY, M.D., Chicago; Professor of Surgery and Head, Division of Plastic Surgery, University of Illinois, College of Medicine; Senior Attending Plastic Surgeon, University of Illinois and St. Luke's Hospitals; Plastic Surgeon, Chicago Rock Island & Pacific Railroad.

Tuesday Afternoon, April 12

HYPERSPLENISM and the Anemias"—STEVEN O. SCHWARTZ, M.D., Chicago; Professor of Internal Medicine, Cook County Graduate School; Professor of Hematology, Chicago Medical School; Director, Hematology Laboratories, Cook County Hospital and Hektoen Institute for Medical Research of the Cook County Hospital.

"The Gall-Bladder Problem"—CLAUDE J. HUNT, M.D., Kansas City, Missouri; Kansas University Medical School, Chief, Surgical Department, Research Hospital; Surgeon, Research Clinic, Menorah Hospital, St. Mary's Hospital Hunt Surgical Group; Consulting Surgeon, Missouri Pacific, Frisco and Chicago, Milwaukee & St. Paul & Pacific Railroads.

Methods and Principles in Skin and Soft Tissue Transplantation"—NEAL OWENS, M.D., New Orleans; Professor of Clinical Surgery, Plastic Surgery, Tulane University; Head, Department of Plastic Surgery, EENT Hospital, New Orleans; Senior Visiting Surgeon, Touro Infirmary; Consultant for Southern Pacific Railroad.

"Trauma and the Psychiatrist"—JOHN R. ADAMS, M.D., Chicago; Chief, Neuropsychiatric Clinic, Passavant Memorial Hospital; Associate in Neurology and Psychiatry, Northwestern University Medical School; Psychiatric Consultant, V. A. Research Hospital.

Wednesday Morning, April 13

THE Therapy of Hypertension"—LEROY H. SLOAN, M.D., Chicago; Clinical Professor of Medicine, University of Illinois; Consulting Physician, Cook County Hospital; Editor-in-Chief, The Tice-Sloan Practice of Medicine; Chief of Medical Department, Illinois Central Hospital, Chicago.

"Surgery of the Kidney in Cardiovascular Disease"—GEORGE J. BULKLEY, Chicago; Associate in Urology, Northwestern University Medical School; Assistant Attending Urologist, Wesley Memorial Hospital; Consultant in Urology, V.A. Research Hospital.

"The Diagnosis and Treatment of Coronary Thrombosis"—DON C. SUTTON, M.D., Chicago; Professor of Medicine, Northwestern University Medical School; Senior Attending Physician, Cook County Hospital; Attending Physician, Evanston Hospital; Consultant in Cardiology, St. Francis Hospital, Evanston.

"The Status of the Surgical Treatment of Hypertension and Peripheral Vascular Diseases"—ADRIEN VERBRUGGHEN, M.D., Chicago; Attending Neurosurgeon, Presbyterian Hospital, Chicago; Consulting Neurosurgeon, St. Francis Hospital and Evanston Hospital, Evanston, Illinois; Clinical Professor of Neurological Surgery (Rush) University of Illinois College of Medicine.

Wednesday Afternoon, April 13

CARCINOMA of the Breast"—CARL W. EBERBACH, M.D., Milwaukee; Professor of Surgery and Director of the Department of Surgery, Marquette University School of Medicine; Consulting Surgeon, Milwaukee Road.

"The Management of Multiple Injuries"—JOHN LINDQUIST, M.D., Chicago; Assistant Professor of Surgery, University of Illinois College of Medicine; Attending Surgeon, St. Luke's Hospital, Chicago.

"Fractures of the Upper End of the Femur"—J. J. CALLAHAN, M.D., Chicago; Professor and Head of the Department of Bone and Joint Surgery, Loyola University, Stritch School of Medicine; Senior Attending Surgeon, Cook County Hospital, St. Anne's Hospital; Consultant, Loretto and Holy Cross Hospitals; Consulting Surgeon, Illinois Central Railroad.

"Traffic Injuries—A Surgical Problem"—RICHARD W. ZOLLINGER, M.D., Columbus, Ohio; Assistant Clinical Professor of Surgery, Ohio State University, Columbus; Director of Medical Education, Mount Carmel Hospital, Columbus; President of Columbus Surgical Society.

Thursday Morning, April 14

PRINCIPLES of Rehabilitation"—BEN L. BOYNTON, M.D., Chicago; Medical Director, Rehabilitation Institute of Chicago; Chairman, Department and Professor of Physical Medicine, Northwestern University Medical School; Attending Psychiatrist, Passavant Hospital; Consultant, V.A. Research and Wesley Memorial Hospitals.

"Traumatic Lesions of the Chest"—WILLARD VAN HAZEL, M.D., Chicago; Clinical Professor of Surgery, Thoracic Surgery, University of Illinois College of Medicine; Member Founders' Group, American Board of Surgery; Attending Surgeon, St. Luke's Hospital, Chicago.

"Surgical Treatment for Diverticulosis of the Colon"— E. S. JUDD, M.D., Rochester, Minnesota; Associate Professor of Surgery, Mayo Foundation; Staff Surgeon, Mayo Clinic.

"The Diagnosis and Treatment of Hemorrhoids"—GUY PONTIUS, M.D., Chicago, Attending Surgeon, St. Luke's Hospital; Associate Professor of Surgery, Northwestern University; Consulting Surgeon, Illinois Central Railroad.

American Academy

THE AMERICAN ACADEMY OF OCCUPATIONAL MEDICINE held its Seventh Annual Meeting at Hotel Warwick in Philadelphia, February 10-11, 1955. Approximately 150 members, Fellows, and guests were presented with a varied program, which had been arranged by F. BENEDICT LANAHAN, M.D. The first session opened with a discussion on the diagnostic and therapeutic aspects of ultrasonics by JAY J. NEWMAN, Radio Corporation of America, Camden, New Jersey. "Electromyography in Industrial Medicine" was discussed by FRANCIS J. BONNER, M.D., Ardmore, Pennsylvania, and "Ballistocardiography in Industrial Medicine" by EDWARD W. BIXBY, JR., M.D., Philadelphia. The afternoon session began with "Industry and the Senior Citizen" by EDWARD L. BORTZ, M.D., Philadelphia, which was followed by "Early Diagnosis: The Industrial Physician's Duty and Opportunity" by JOSEPH T. BEARDWOOD, JR., M.D., Philadelphia; "Some Aspects of Hypertension in Industry" by C. ANTHONY D'ALONZO, M.D., Wilmington, Delaware; and "Employment of Persons Under Active Psychiatric Care" by BERNARD BEHREND, M.D., Philadelphia. On Friday there were two papers on lead exposure, one of which, "Mobilization Effects of Versene on Metal Deposits," was presented by HEINRICH BRIEGER, M.D., and the other, "Lead Absorption Experiences in the Manufacture of Storage Batteries," by GILBERT B. MEYERS, M.D., Medical Supervisor, Philadelphia Plants, Electric Storage Battery Company.

Also on Friday there were "The Agency Concept of Industrial Medical Practice," by IRVING R. TABERSHAW, M.D., New York; "Distribution of Weight in

Feet," by DUDLEY J. MORTON, New York; "Modern Medical Care for the Reduction of Absenteeism in Industry: A Challenge to Free Enterprise," by JOSEPH A. LANGBORD, M.D., MAX R. WEINER, and CHARLES WEINSTEIN, Philadelphia.

Prior to the Annual Dinner, the Academy members and their guests were entertained at a cocktail hour by the local representatives of the Mine Safety Appliance Company through the courtesy of E. C. Brainerd. The Dinner Speaker was ADOLPH KAMMER, M.D., who described and illustrated some of his recent experiences in Latin America.

Officers of the Academy for the coming year will be: President, FRANK PRINCI, M.D.,; Vice-President, E. E. EVANS, M.D.; with IRVING R. TABERSHAW, M.D., and LEONARD J. GOLDWATER, M.D., re-elected as Treasurer and Secretary, respectively. LAMSON BLANEY, M.D., was elected to the Board of Directors for a term of three years, and JOSEPH QUIGLEY, M.D., for a term of one year to fill the unexpired term of DR. EVANS. ARTHUR F. MANGELSDORFF, M.D., and D. JOHN LAUER, M.D., continue as members of the Board of Directors.

New members elected were: NORMAN BOYER, M.D., Ecusta Paper Corporation, Pisgah Forest, North Carolina; JAN LIEBEN, M.D., American Cyanamid Company, Bridgeville, Pennsylvania; WILBUR F. MACDONALD, M.D., General Electric Company, Schenectady, New York; MICHAEL MESSIAN, M.D., Pratt and Whitney Aircraft, East Hartford, Connecticut; RICHARD D. MUDD, M.D., Chevrolet-Saginaw Grey Iron Foundry, Saginaw, Michigan; ERNEST A. TERRY, JR., M.D., General Electric Company, Louisville 1, Kentucky; WALTER G. VERNON, M.D., Radio Corporation of America, Camden, New Jersey.

MARVIN L. AMDUR, M.D., of Buffalo, presented a paper on "Small Plant Medical Services" in partial fulfillment of the requirement to be elevated from member to Fellow. RUFUS B. CRAIN, M.D., of Rochester, New York, and FRANK T. OBERG, M.D., of Bridgeport, Connecticut, were designated Fellows Emeritus.

An interesting part of the program was a discussion and inspection of the Sidney Hillman Medical Center which is operated by the Amalgamated Clothing Workers Union of Philadelphia.

ROBERT A. KEHOE, M.D., was chosen as the representative of the American Academy of Occupational Medicine to the American Board of Preventive Medicine.

College of Physicians

AMERICAN COLLEGE OF PHYSICIANS is including in its Spring Program a week-long course which will be entirely devoted to the subjects of health maintenance, disease prevention, and early detection of deviations from normal. This will be presented from March 28 to April 1, 1955, at the University of Pennsylvania School of Medicine, Philadelphia. John P. Hubbard, M.D., is Director, with and Norbert J. Roberts, M.D., Co-Director. The program is planned around an attempt to arrive at a pattern for what should constitute a good periodic health examination of an individual who is essentially free of symptoms. Thus, while a neurologist may take 45 minutes to obtain a complete neurologic history and another 45 minutes to do a complete neurologic examination, what questions would he ask with confidence that they would give the greatest "yield" if he had only two or three minutes to estimate the status of an asymptomatic individual's nervous system? If he could spend but two or three minutes doing a so-called "cursory" neurological examination, exactly what tests would he perform in those two or three minutes? An outstanding man in each specialty will discuss these things relative to his area of interest and, further, will explain what, if any, laboratory examinations should be made to measure the status of the individual's health in every case regardless of the absence of symptoms. Such presentations will initiate the sessions devoted to each subspecialty. The course was conceived and is being initiated by the Occupational Health Section of the Department of Public Health and Preventive Medicine of the University of Pennsylvania, and thus, though under the sponsorship of the University and arranged by the College, it is essentially industrial medical. The program is as follows:

Monday, March 28

"Scope, Goals and Methods of the Course"—JOHN P. HUBBARD, M.D., F.A.C.P.

"The Demand for the Clinical Practice of Preventive Medicine"—LEMUEL C. MCGEE, M.D., F.A.C.P.

"Techniques in the Maintenance of Health"—F. CURTIS DOHAN, M.D., F.A.C.P.

"The Periodic Measurement of an Individual's Health"—NORBERT J. ROBERTS, M.D.

"Normal Pulmonary Function and Early Detection of Disease"—JULIUS H. COMROE, JR., F.A.C.P.

"The Early Detection and Prevention of Lung Cancer"—KATHERINE R. BOUCOT, M.D., F.A.C.P.

"The Prevention of Chronic Non-Tuberculous Pulmonary Disease"—JOHN E. DEITRICK, M.D., F.A.C.P.

"The Early Detection and Prevention of Tuberculosis"—DAVID A. COOPER, M.D., F.A.C.P.

Panel Discussion of the Above Subjects—DRS. COMROE, BOUCOT, DEITRICK and COOPER.

Tuesday, March 29

"The Prevention of Viral Diseases of the Respiratory Tract"—WERNER HENLE, M.D.

"The Prevention of Poliomyelitis"—LEWIS L. CORIELL, M.D.

"The Prevention of Rheumatic Fever"—J. P. HUBBARD, M.D.

"What is Preventable in Acute Glomerulonephritis and Nephrosis?"—MILTON RAPOPORT, M.D.

Symposium on The Norms of Mental Health and upon the Recognition and Prevention of Deviations from These Norms.

"The Child"—MILTON J. E. SENN, M.D.

"The Adolescent"—BENJAMIN H. BALSER, M.D.

"The Adult Male"—KENNETH E. APPEL, M.D., F.A.C.P.

"The Adult Female"—O. SPURGEON ENGLISH, M.D., F.A.C.P.

Panel Discussion of the Above Subject—DRS. SENN, BALSER, APPEL and ENGLISH.

Wednesday, March 30

"Measurement of the Health of the Cardiovascular System"—PAUL D. WHITE, M.D., M.A.C.P.

"Etiology, Pathogenesis, and Prevention of Atherosclerosis"—THOMAS M. DURANT, M.D., F.A.C.P.

"Prevention of Cardiac Arrhythmias"—J. SCOTT BUTTERWORTH, M.D., F.A.C.P.

"Prevention of Cardiac Neuroses"—HARRY F. ZINSSER, JR., M.D.

Panel on the Above Subjects—DRS. WHITE, DURANT, BUTTERWORTH and ZINSSER.

The Etiology, Pathogenesis, and Prevention of Essential Hypertension:

"Organic Factors"—WILLIAM A. JEFFERS, M.D., F.A.C.P.

"Psychogenic Factors"—LEON J. SAUL, M.D.

"The Early Detection and Prevention of Venous and Pulmonary Thromboembolic Phenomena"—JOSEPH B. VANDER VEER, M.D., F.A.C.P.

"The Early Detection and Prevention of Peripheral Vascular Disease, Excluding Venous Thrombosis and Embolism"—HUGH MONTGOMERY, M.D., F.A.C.P.

Thursday, March 31

"Measurement of the Health of the Gastro-intestinal Tract, Including the Liver and Pancreas"—THOMAS P. ALMY, M.D., F.A.C.P.

"The Prevention of Peptic Ulceration, Its Recurrence, and Its Complications"—HARRY SHAY, M.D., F.A.C.P.

"The Prevention of Malignant Neoplasms of the Gastro-intestinal Tract"—HENRY L. BOCKUS, M.D., F.A.C.P.

"The Prevention of Disease of the Gall-Bladder and Biliary Ducts"—JAMES L. A. ROTH, M.D., PH.D.

"The Prevention of Hepatic Disorders"—WALTER PAUL HAVENS, M.D.

"The Prevention of Recurrences and the Complications of Ulcerative Colitis"—HENRY J. TUMEN, M.D., F.A.C.P.

Panel Discussion of the Above Subjects—DRS. ALMY, SHAY, BOCKUS, ROTH, HAVENS and TUMEN.

"Measurement of the Organic Health of the Central and Peripheral Nervous System"—SAMUEL B. HADDEN, M.D., F.A.C.P.

"The Prevention of Migraine and Tension Headaches"—HAROLD G. WOLFF, M.D., F.A.C.P.

"Measurement of the Health of the Genito-urinary System"—CHARLES A. W. UHLE, M.D., F.A.C.S.

"The Prevention of Pelvic Cancer"—CLAYTON T. BEECHAM, M.D.

"The Prevention of Urinary Tract Obstruction, Infection and Calculus Formation"—EDWARD W. CAMPBELL, M.D.

"The Early Detection and Management of Benign Pelvic Lesions"—PAUL O. KLINGENSMITH, M.D.

Friday, April 1

"Measurement of the Health of the Endocrine System"—F. CURTIS DOHAN, M.D.

"The Prevention of Diabetes and Its Complications"—GARFIELD G. DUNCAN, M.D., F.A.C.P.

"Normal Nutrition and the Prevention of Over and Under Nutrition"—FREDRICK J. STARE, PH.D., M.D.

"Measurement of the Health of the Musculoskeletal System"—FREDERICK LEE LIEBOLT, M.D., F.A.C.S.

"The Influence of Occupation on Health"—NORBERT J. ROBERTS, M.D.

"The Influence of Fatigue, Stress, and Relaxation on Health"—EDWARD M. WEISS, M.D., F.A.C.P.

"Symposium on the Experiences of the Armed Services in the Measurement and Maintenance of Health"—DAN C. OGLE, Major General, USAF (MC), F.A.C.P.; TOM F. WHAYNE, Colonel, (MC), USA; ROBERT A. BELL, Captain, (MC), USN, F.A.C.P.

Michigan IMA

MICHIGAN INDUSTRIAL MEDICAL ASSOCIATION in cooperation with Michigan State Medical Society has the following program for the Sixth Annual Michigan Industrial Health Day, on Wednesday, March 9, at the Sheraton-Cadillac Hotel in Detroit:

Forenoon

"Traumatic Wet Lung"—RICHARD H. MEADE, M.D., Grand Rapids.

"Use of Plaster of Paris in Common Injuries"—THOMAS B. QUIGLEY, M.D., Boston.

"Recognition and Early Management of Slipped Femoral Epiphysis"—SYLVESTER J. O'CONNOR, M.D., Ann Arbor.

Panel on "Open and Closed Fractures of the Tibia"—Moderator, C. G. JOHNSTON, M.D., Detroit; ANDREW J. DAY, M.D., Detroit; CURTIS N. HANSON, M.D., Kalamazoo; DONALD F. KUDNER, M.D., Jackson.

Noon

LUNCHEON: Michigan Industrial Health Association; speaker, EDWARD C. HOLMBLAD, M.D., Chicago, "Report on IMA Activities."

Afternoon

"Treatment of Injured Hand in Children"—JOSEPH L. POSCH, M.D., Detroit.

"Observation on the Fluid Needs of the Traumatized Elderly Patient"—ROBERT E. L. BERRY, M.D., Ann Arbor.

"Physical Therapy in Traumatic Conditions"—JAMES W. RAE, M.D., Ann Arbor.

"Prevention of Accidental Trauma"—GEORGE M. WHEATLEY, M.D., New York.

Presentation of Honorary Scroll—ROBERT H. BAKER, M.D., Pontiac.

Health Education: ARTHUR VORWALD, M.D., Wayne University, Professor of Occupational Medicine.

Health Education: O. TOD MALLORY, JR., M.D., University of Michigan, Director of Institute of Industrial Health.

At dinner, in the evening, RALPH L. LEE will talk on "The Feel of a Firm."

AAIN

THE Medical Advisory Council of the American Association of Industrial Nurses met in New York January 20, 1955, in conjunction with the Executive Committee of the American Association of Industrial Nurses. DR. HENRY S. BROWN, Medical Director, Michigan Bell Telephone Company, Detroit, was elected Chairman of the Committee succeeding DR. EDWARD H. CARLETON, General Medical Director, Inland Steel Company, Chicago.

Important was the adoption at this meeting of the following Statement of Principles:

PRINCIPLES *to Govern the Relationship Between Physician and Nurse Working Within Industry:*

The Physician-Nurse relationship in industry is based upon certain reciprocal attitudes, obligations, and responsibilities. Working together as an effective team the physician and nurse gain their objective, which is to promote the health and welfare of the employee.

In the practice of medicine and nursing the nurse looks to the physician for support, authority, help, and guidance. And the physician looks to the nurse for applied skills, good judgment, integrity, and a willingness in the performance of nursing duties.

Principles to govern the physician-nurse relationship within industry are:

1. Conformance to the accepted ethical standards of the nursing and medical professions.
2. Recognition of a mutual objective.
3. Mutual respect, confidence, and loyalty between the physician and nurse.
4. Recognition of the physician's authority in all matters pertaining to the care of the patient.
5. The nurse establishes standards of nursing procedures and is directly responsible for the quality of these services.
6. Recognition of the dignity of the industrial nurse and an appreciation for the nurse's contribution to the health program.
7. Channels of authority for the responsibility of administration of the health program must be established.
8. The physician will represent the nurse before management in all professional and administrative matters when expedient.
9. All professional personnel are encouraged to continue their professional advancement and to participate in the activities of their professional associations.

Books

Stress

THIRD ANNUAL REPORT ON STRESS: HANS SELYE and ALEXANDER HORAVA. Acta, Inc., Montreal, Canada, 1953, pp. 637.

"Ever since man used the word 'disease' he has had some, at least subconscious, inkling of the stress concept. The very fact that a single term can be used to denote a great variety of individual maladies, clearly indicates that they have something in common. They possess, as we would now say, some non-specific features which permit to distinguish disease from the condition of health. Yet, precisely because these manifestations are not characteristic of any one disease, they have received little attention in comparison with the specific ones. They were thought to be of lesser interest for, unlike the latter, they did not help to recognize the 'eliciting pathogen' or lend themselves to any effective type of specific therapy.

"Nevertheless, several early investigators have attempted to elucidate the mechanisms involved in such non-specific reactions. Since our knowledge of

the nervous system antedates, by far, the development of modern endocrinology, it is understandable that, among the two great integrating systems of the body, the nervous and the hormonal systems, the former was the first to be examined from this point of view. Ricker, Speransky, Reilly, Hoff and many others have gathered important data concerning the role of the nervous system in such non-specific reactions as fever, polymorphonuclear leucocytosis, inflammation, etc. In the domain of what may be called 'physiologic stress' W. Cannon's studies helped us to understand the part played by the sympathetic nervous system and its humoral effector substances.

"Furthermore, quite independently, a great deal of progress has been made in the study of pituitary and adreno-cortical hormones by chemists, physiologists and clinicians, too numerous to mention by name.

"All the knowledge acquired as a result of these early investigations was indispensable for the eventual formulation of the stress-concept, whose leading motive is one of unification. Additional experiments had to be performed, however, to show that the many non-specific responses of individual target organs are closely integrated and actually represent part of a single biologic response, the adaptation syndrome. These investigations made it evident that the 'stress pattern' of reaction plays an integral part in the most varied physiologic, pathologic and pharmacologic phenomena."

So through 637 pages this evidence is pursued.

Basic and Primary Orientations

EMOTIONS AND BODILY CHANGES (Fourth Edition): FLANDERS DUNBAR, M.D. Columbia University Press, New York, 1954, pp. 1192, $15.00.

Most physicians talk glibly about psychosomatic medicine but mighty few know much. This large book is designed for those physicians who seek better qualification in the world of emotions and bodily changes, and that number is legion. It is the fourth edition and chiefly is new through inclusion of critical abstracts of the bibliography forward from 1946, that being the year of the third edition.

Although the author emphasizes the bibliographic nature of the book, actually it is most valuable in those parts that reflect her own appraisals of psychosomatic interrelationship. This means that the fundamental concepts of the author herself that have reappeared in the several editions are of the greatest value for the beginner in this field. The groper enormously will be aided by such generalizations as now quoted:

"Scientific study of emotion and of the bodily changes that accompany diverse emotional experience marks a new era in medicine. We know now that many physiological processes which are of profound significance for health, not only of the individual but also of the group, can be controlled by way of the emotions. In this knowledge we have the key to many problems in the prevention and treatment of illness, yet we have scarcely begun to use what we know. We lack perspective concerning our knowledge in this field and are confused in our concepts of the interrelationship of psychic, including emotional and somatic processes in health and disease."

"The present monograph represents an attempt to bring together in some sort of perspective the research material which has combined to develop those concepts in medicine which are the necessary foundation for further research in the sphere of psychosomatic problems. As William Osler said at the beginning of the present century, 'To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all.' Both are absolutely necessary. A distinguished librarian has added, 'Bibliography is the foundation of research, and however level and flat that foundation may be, however dull may be the task of laying it deep and strong, no lasting and lofty superstructure may safely be reared save on the secure footing of a knowledge of previous work done by others, a knowledge resting necessarily even in the fields of science on the much despised labor of the bibliographer,' a 'fundamental factor' being 'the record of what has been known and spread abroad by previous inquirers.'"

At one point, Dr. Dunbar quotes Pasteur's statement, "In the field of observations chance favors only him who is prepared." Those who have gained an appreciation of the principles and observations presented here will find themselves at least partially prepared.

In some quarters, this book has been criticized unfavorably on the grounds that many significant publications within recent years have not been included within the bibliography. This complaint may be a valid one but no fault here is found. The need for most physicians is not for the final word but for basic and primary orientations, and this book offers just that.

Twenty Surgeons

PROGRESS IN CLINICAL SURGERY: Symposium edited by RODNEY SMITH, M.S., F.R.C.S. Little Brown & Company, Boston, 1954.

This volume of some 400 pages is the composite work of 20 British surgeons. It is concisely written, well organized, and yet is comprehensive. The reviewer was particularly impressed by the chapters having to do with fluid replacement in the surgical patient, the discussion of the treatment of carcinoma of the esophagus, the text on the surgical treatment of peptic ulcer, the sound position taken on the question of pancreatic carcinoma, the excellent discussion of the treatment of carcinoma of the breast, including the use of x-ray and hormones, the analysis of the measures to prevent complications in radical breast surgery, the splendid discussion of the principles of medical treatment of hyperthyroidism, and the very interesting chapter on the use of sympathectomy in peripheral vascular disease.

Every chapter is up-to-date, and in general the conclusions of the various contributors are sound and in keeping with prevailing opinions among most American surgeons. On the cover is the statement that "This volume spotlights surgical progress in fields usually covered only briefly in the larger textbooks of surgery."

This book can be highly recommended to the young surgeon who is studying for his "Boards" and to the busy general surgeon who would like readily to review the current opinions on the treatment of a large variety of surgical conditions.

—CHESTER C. GUY, M.D.

Brick and Mortar

THE SLOUGH INDUSTRIAL HEALTH SERVICE: Seventh Annual Report 1953-1954. Slough, England, pp. 32, Two Shillings.

This annual report deserves mention, if for no other reason, because it is offered for sale at the price of two shillings. It must be good. Beyond that

facetious remark, this report is substantial and praiseworthy. In the United States there is endless lip service and writings about medical services available to small plants. Mighty little has been accomplished in terms of reality. In England there is less talk and more brick and mortar, to wit: The Slough Industrial Health Service.

Enigma Solved

COTTON MATHER: FIRST SIGNIFICANT FIGURE IN AMERICAN MEDICINE: OTHO T. BEALL, JR.; RICHARD H. SHRYOCK. The Johns Hopkins Press, Baltimore, Maryland, 1954, pp. 241, $4.00.

This biography of Cotton Mather of Boston closely is identified with medicine of the period but the author's emphasis is not upon medicine and thus portions concerned with occupational health are not numerous. Cotton Mather was not a physician but like many learned persons of his time he knew as much medicine as many of those who professed that calling. During Cotton Mather's time, or at least during the latter portion of his life, there was in Boston only one graduate in medicine, Dr. William Douglass. The famous Dr. Zabdiel Boylston, Cotton Mather's contemporary, had no formal training in that profession, so that it is possible that Cotton Mather was his medical peer. Over and over Cotton Mather has been charged with arrogance, personal vanity, bigotry, and meddlesomeness, and particularly was he irritating to portions of the medical profession and notably Dr. Douglass. Denied a precise status as a physician, Cotton Mather, in his ambition, undertook the education of his daughter Katherine in medicine so that the possibility is that she became the first woman physician in America near to the year 1710 and thus antedates by 140 years Elizabeth Blackwell. Any such claim is subject to contradiction, and the point is not pressed.

Over the years there has been much speculation as to who guided the officials of the Massachusetts Bay Colony to the point of enactment of the famous law (which well may have been the first pure food and drug law to appear in the Americas and one of the first the world over) that forebade the use of lead worms in still heads in the production of alcoholic beverages, notably rum. That episode exerted enormous influence in the renaissance of lead poisoning exploration in Europe such as in connection with the Devonshire Colic. The disclosure of lead as the offender in the 150 year old epidemic of Devonshire perhaps directly stems from the Boston experience, with Benjamin Franklin serving as the revealer to Dr. George Baker of lead as a prospective source. How could it come about that the Boston group were so well informed? The answer possibly now is clear-cut—Cotton Mather. That clergyman and quasi-physician had in his possession prior to 1723 a copy of the first edition of Ramazzini's "De Morbis Artificum Diatriba" published in 1700, although he could have been, on a time basis, in possession of the 1713 edition or the anonymous 1705 English translation. However, Mather was a Latin scholar so that the reading of the original constituted no difficulty. Ramazzini furnished excellent descriptions of lead poisoning so that it now becomes likely that the enigma has been solved. The long scientific arm of Ramazzini reached into the Massachusetts Bay Colony through Cotton Mather. The European renaissance in lead poisoning found its impetus in the dry gripes produced by Boston rum, but the guiding wisdom stems from the old master of Modena and Padua, dead by nine years in 1723.

Letters

"And the Right Side"

TO THE EDITOR: BRUCE H. SMITH'S article and DR. C. C. GUY'S letter in the January *Industrial Medicine and Surgery* point up interesting aspects of forensic medicine.

The subject is complex, having at least three sides, namely, the plaintiff's, the defendant's, and the right side. The writers draw attention to an unflattering condition in medicine, but there is another unflattering side.

Quite recently a patient injured in an auto collision was dismissed as a neurotic or malingerer. A traumatic pleural effusion and a proved subdural hematoma were easy to demonstrate.

Again, a skilled punch press operator in her forties was injured in a collision. Right ribs 1 to 7 were broken near their attachment, and right clavicle and right scapula were fractured. The ribs healed with large callus formations involving the intercostal nerves. Right clavicle and right scapula healed in such deformity that, with the caving of the chest, the right limb hung from the skeleton in adduction and was two inches below the left shoulder point. One physician who does much work for insurance companies rated her at 15% disability and advised that she see a psychiatrist for her complaints of chest pain. Another estimated her at 20% disability. Neither of the reports mentioned the deformity.

MR. SMITH describes some modern views on intervertebral disc very well. During the last six months I have discussed the problem in Canada, Britain, Switzerland, Denmark, and Sweden. There is no measure of agreement either on diagnostic criteria or treatment. The bewildering flux in orthopedic ideas is well shown in recent *British Medical Journal* reports of a round table discussion by the British Orthopedic Association. Questions from the floor were answered by the group. Differences of opinion were wide. "Who is to judge when the judges disagree?"

Little in medicine is static. Room for genuine differences, based on our ignorance, which is still abysmal, should be left. We should not forget that medicine is not a science. It is an art which under great difficulties is trying to become a science. One of the difficulties is that our subjects and data cannot be controlled well enough to satisfy logical scientific canons. Today's "scientific medicine" is next decade's "pseudo-scientific medicine" and the next generation's object of ridicule. There is little room for dogmatism because "the most important and the most neglected study in medicine is the history of medicine."

The lawyer's side of forensic medicine is often misunderstood by doctors. So long as patients must go to court to obtain settlements advocacy will be important. Legal processes and juries being what they are there is little hope of change on this score. In systems where there are doctors trained as lawyers and lawyers trained as doctors many objectionable features disappear. The Ontario Compensation System shows another way in which disagreeable features are abolished because it offers no big plums for legal talent. So long as lawyers in our legislature make the laws, the possibility of alteration is bleak.

—FRANK RIGGALL, M.D.,
Prairie Grove, Arkansas.

INDUSTRIAL MEDICINE AND SURGERY

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Industrial Physicians in Academic Posts

LOOK at the bulletin of any medical school; at the vitae of any group of industrial Medical Directors; at the roster of the staffs of general hospitals. Having looked, there will have been observed, and with no great astonishment, that the majority of industrial Medical Directors are now identified with academic institutions and contribute to instruction in occupational health. Some of these Medical Directors obtain the eminence of full professorships attended at times by an ample *quid pro quo*. Others function on a volunteer basis and without any remuneration. Sometimes, no remuneration is wanted nor would any be accepted. The position occupied on the academic level—with "extramural" lecture at the lowest and the full professorship at the highest—makes no great difference. The important thing is that the industrial Medical Director does participate in the formal training of those who later may be his associates.

Take another look. Less clearly, it may be established that on most medical college and public health college faculties, several physicians have a continuing or temporary arrangement whereby they serve industry as consultants. Thus it may appear that the factory, as to its medical difficulties, is being brought into the lecture room by that person best qualified to portray good occupational health to students. Equally important, but on a lower scale, the medical refinements of hospitals are being carried into industrial medical situations by that person best able to cooperate with the industrial Medical Director—the hospital staff teacher.

In a recent private letter, an officer of IMA has deplored the lack of training facilities for industrial physicians in this language: "My one concern is how and where can doctors of tomorrow get sufficient training to come up to the specific requirements. To my knowledge, there are few universities throughout the country who are set up to give indoctrination courses. Likewise, broadly speaking, there are few industries throughout the country whose minimal standards are those recommended by the Occupational Health Institute. I am afraid there is going to have to be a lot of educational groundwork done all along the line if the doctors of the future who wish to confine their interest to the field of occupational health can be inspired during their early years to get the necessary training." Some of this once justified pessimism may be dispelled. At this time, facilities already exist for the formal training of a few more young physicians in occupational health than now are availing themselves of these facilities. This training no longer is conducted in public health or medical schools by those unfamiliar with industry's operations though adequately familiar with occupational health textbooks and history. Commendably, training now is being offered by these colleges through the services of the men most competent to teach—the industrial Medical Directors themselves.

Los Angeles Smog

SHOCKING it must be for the loyal resident of Los Angeles to learn that California's much vaunted sunshine may be one of the villains in the causation of his city's troublesome smog—at least the lachrymatory variety. It is possible that if Los Angeles were overcast by the erstwhile Pittsburgh type of atmosphere, now only an unpleasant memory for that busy center, there would

be in Los Angeles no smog of the eye irritant form. Injudiciously it might be urged that what Los Angeles needs might be an iron furnace going at full tilt with all stops open.

ALMOST every person concerned with atmosphere beyond the point of breathing it has entertained and oftentimes spoken his own notion as to the causation of Los Angeles' bothersome smog. Scores of theories have been explored and the greater number tossed into the discard. The now current beliefs may be doomed to the same appraisal of worthlessness. California sunshine may be one villain. Not entirely ignoring industry's air pollutants or the contribution of household combustions, it appears that automobile wastes may be the major offender. It is calculated that some 10% of all automobile fuel is wasted, chiefly as unburned or only partially burned items. For some reason, the atmosphere over Los Angeles contains ozone, a highly active form of oxygen, in amounts strikingly higher than is to be found above other cities of the United States. This ozone content may be 10 times higher as compared to some other cities, and reaches close to the possibility of direct irritation from the ozone itself. Some of this excess may derive from natural sources but more likely man-made chemicals including the oxides of nitrogen may enter into the formation of this ozone pervading the air. Then comes the sunlight, the source of all of earth's energy, and exerts energy upon the ozone. This paves the way for the combination of this ozone with the hydrocarbon wastage from automobiles and industry, with the formation of lachrymators. As yet, the exact chemical nature of these lachrymators may have not been detected, but, named or unnamed, the chemicals are just as active, and eyes are just as responsive, and human beings are just as resentful.

Possibly the exposition and elucidation of this smog maker is applicable only to one form of smog—the eye-insulting variety. Even so, that removes some of the mystery. And what is the remedy? No man has yet said. Even if the prestige and pride of Los Angeles have suffered, at least no one wants to do away with that city's beneficent sunshine.

The Goal of Industrial Medicine

THREE main features of modern civilization are "standardization, urbanization and sophistication," and they lead to biologic conflicts. One can standardize machines and methods but not human behavior, because of human individuality. No two men are alike. Urbanization deprives man of the invigorating contact with nature and drives him into slums of insanitary conditions and overcrowding which make a healthy family life difficult. From this to development of sophisms and artificial tastes is but one step. Refined food devoid of nutrient value gets preference over natural food and the result is malnutrition; unnatural hours of work and sleep lead to mental stress. This comes out of modern industries depending too much on mechanical power for running their factories and too little on emotional power. The whole concept of industrial medicine, however, is based on the equal importance of both and their interdependence. Classical researches by social scientists like the one known as the Hawthorne Experiments teach that technology without sociology is like a gorgon monster. However, the potentiality of emotional energy for good or ill is as great as that of physical. Steam which can run a train can also blow up a boiler. Goodwill can release willing cooperation which can move mountains; ill-will can lead to frustrations, stagnation, and destruction. Ideology has been the cause of world-shaking religious creeds as well as of religious wars. . . . Every factory harbors its own group of physical, chemical and biologic hazards to the health of its workers. The industrial physician joins hands with engineering specialists for control of these hazards. The method used is engineering revision of the environment, the equipment or the manufacturing process, or substitution of a poisonous substance with a less dangerous one, and so on. Through medical examination the physician tries to find the right man for a particular job and the right job for a particular man. This helps to eliminate frustrations and subsequent neuroses arising out of maladjustment on work. The most important and perhaps the most difficult part of an industrial health service is prevention and early diagnosis and treatment of neuroses as they arise in the daily routine. For this the industrial physician falls back on social scientists and requisitions and uses their techniques of social skills, like induction of workers, indirect counseling, group discussions, schemes of training within industry, and so on. As, however, the goal of industrial medicine is positive health, an industrial health service cannot end with the care of the worker's health during his factory life only, but has also to include among its activities his nutrition, recreation and medico-social problems—in fact his life of all 24 hours, and follow it up with health counseling.

—From "Industrial Medicine and Modern Civilization," by DR. H. P. DASTUR in *Proceedings of the Society for the Study of Industrial Medicine*, September, 1954.

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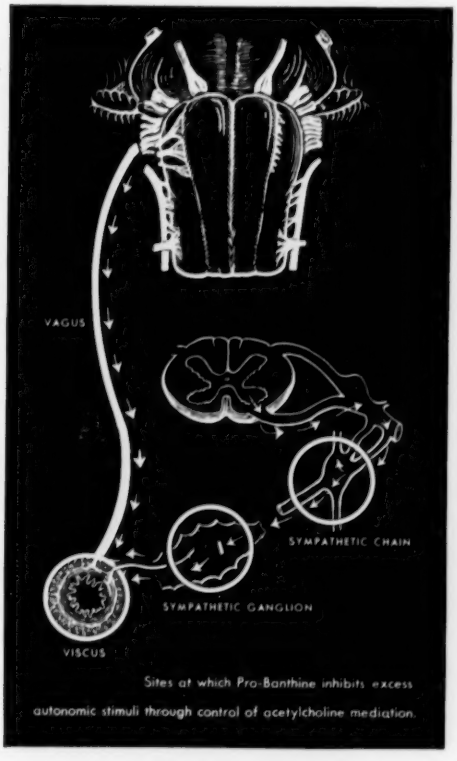

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1. Schwartz I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology *25*:416 (Nov.) 1953.
2. Roback, R. A., and Beal, J. M.: Gastroenterology *25*:24 (Sept.) 1953.

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News, Comment, Opinion

NOTHING IS IMPOSSIBLE to an earnest group of dedicated public servants. Here's one of the functions listed in an organizational statement of a federal agency: "Reporting non-reportable items on proper forms."

—*Personnel Administration*, September, 1954, in *The Management Review*, February, 1955.

Executive Development

MUCH of executive development today is a getting ready to get ready. Through it all, there are too many promises and not enough payoffs. It recalls the response Victor Hugo gave a gushing admirer who asked whether it was difficult to write epic poetry. "Madame," he said, "it's either easy or impossible." So, too, with developing executives. If we sincerely wish our personnel to grow, it's relatively simple. If we are not secure in our beliefs, it can't be done.

—From "Facts and Fallacies of Executive Development," by JULIUS E. EITINGTON, in *Personnel Administration*, January, 1955.

Not the Doctor's Patient

EMPLOYERS utilizing the services of doctors to examine prospective employees must be prepared to answer for the physician's negligence. The New York Court of Appeals refuses to give an employer the benefit of the hospital exemption rule, even though it has been applied to private corporations which engage physicians for treatment of employees or third persons. (Mrachek v. Sunshine Biscuit, Inc., 12/31/54.) The hospital cases are distinguishable; there the doctor-patient relationship exists, the doctor determines what is to be done, and the tort is committed in the course of treatment. Here, the plaintiff merely sought employment, was not the doctor's patient, and asked for and received no treatment.

—From *The United States Law Week*, February 1, 1955, a publication of The Bureau of National Affairs, Inc., Washington, D.C.

Savings and Protection

MANY companies with under 500 employees believe that a medical program would be too expensive for them—chiefly because they are unaware of the savings and protection a good Medical Department can bring. However, a survey made by the Industrial Hygiene Foundation showed that those having a Medical Department reduced compensation costs by 50%; accident frequency by 45%; occupational diseases by 63%. Absenteeism and turnover also showed significant declines.

—*Industrial Relations News*, in *Notes & Quotes*, January, 1955.

The New Leisure

HISTORY, in one definition, is the story of man's increasing ability to control energy—the energy which limits the material base of any civilization. If there is a dependable supply it will release enough citizens from unremitting drudgery to do some thinking, to observe and invent, develop the arts and sciences, design some noble buildings, write some books. Early civilizations were built on slave power and beast-of-burden power, with some small aid from wind and water. All these societies, from Nineveh to the France of Louis XIV, were handicraft cultures, with little help from inanimate energy or complicated machines.

—From "New Energy for a New Age," by STUART CHASE, in *The Saturday Review*, January 22, 1955.

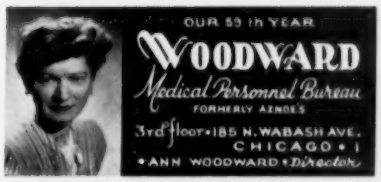
The Three 'A's'

OF THE five major areas in which a person confronts life's daily problems and learns to relate to other people—home, school, church, job and social activity—the occupational area has received the least attention from psychiatry and its allied disciplines. There are today less than half a dozen full-time psychiatrists and equally few clinical psychologists and social workers in industry," the Menningers have found. And today, the Menningers point out: "The most conspicuous mental health problem in industry is what might be called the 'three A's'—Absenteeism, Accidents, and Alcoholism. No business or industry is free of them." Yet the three "highlight only a few of the more easily measurable 'specifics' among industrial mental health problems."

—*Cincinnati, Ohio, Enquirer*, January 15, 1955.

Sick Leave and Group Insurance

NATIONAL INDUSTRIAL Conference Board last year studied 963 companies and discovered that 80% of their employees, in the aggregate, were compensated



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Medical Director: (a) 44; eight years Medical Director, one of country's leading metal fabricating companies; past two years, Medical Director, petro-chemical company; prefers manufacturing plant assignment; well-qualified in industrial hygiene.

Medical Director: (b) Degrees from leading schools; eminently qualified in toxicology; eight years, Director, important industrial hygiene program; three years, Director, cancer industrial research program; early 40's; one of leaders in the industrial medical field; strongly recommended.

Medical Director or Chief Physician: (c) 35; M.D., Harvard; Board eligible Internist; two years, Medical Director, large ordnance works of major company; finishing two years military duty as Chief, Medical Services and Surgeon.

STAFF PHYSICIAN: (d) interested in industrial hygiene; three years, residency, internal medicine, university hospital; finishing two years, medical officer, ammunition depot; late 20's; Cat IV; immediately available.

Staff Physician: (e) 35; M.D., Harvard; four months, post-graduate course, Industrial Medicine; two years industrial physician, major company; nine months, post-graduate course, industrial hygiene; seeks staff appointment, progressing in industry; $10,000; any locality; excellent references.

SITUATIONS OPEN

Medical Director: (f) Large company; qualified to supervise large staff; Northeast.

Medical Director: (g) Assistant; regional plant, leading company; outstanding facilities; career post; city 300,000; East.

Medical Director: (h) Assistant; major company; opportunity become Medical Director large plant now under construction; Southeast.

Medical Director: (i) Assistant; major company; 4000 employees; excellent opportunity advance; Mideast.

Staff: (j) Major company; multiple plant operation; 50,000 employees; outstanding opportunity advance to directorship levels; town 150,000; Northeast.

Staff: (k) To work in one of country's best equipped industrial dispensaries; to $9600; university city; East.

Staff: (l) Part time plus opportunity private practice; medical care program; important company; fairly large city; N.Y.

Staff: (m) Major industrial faculty; requires young General Practitioner with training or experience in minor surgery; East.

Staff: (n) Industrial clinic; surgery experience helpful but not essential; Washington, D.C., area.

Staff: (o) Large company having most modern equipment; to $10,000; university city; Midwest.

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for wage loss due to sickness and disability by company-paid sick leave and group insurance. About half of the companies were analyzed from the stand-point of programs for salaried employees and the other half for programs covering hourly paid workers. In studying programs for salaried employees, the Board found that 49% of the companies had formal sick leave programs, 48% had group accident and sickness insurance plans, and 47% gave direct cash payments to their employees to supplement workmen's compensation. Of the companies studied from the standpoint of workers paid by the hour, 84% provided group insurance, 14% gave supplements to group compensation, and the same number had formal sick leave programs. In 1947 only 6% of a similar group of companies had formal sick leave programs.

—*Chicago Tribune*, February 21, 1955.

Rehabilitation

THE MEDICOLEGAL implications of rehabilitation need close scrutiny when a settlement and litigation are in the offing. The injured person suffers a considerable emotional handicap in the face of his efforts to aid in rehabilitating himself, especially when perhaps an attorney wittingly or unwittingly directs his attention more toward the monetary settlement than toward his recovery. There is need for a mechanism to prevent such unfortunate occurrences. Recovery from the emotional impact of litigation and the frequent delay involved, plus the loss of the all important early weeks of active effort toward rehabilitation are often more harmful than the original injury. Lump sum settlements are likewise deplored because they are so frequently dissipated in a short period of time leaving the worker with a serious impairment and no funds. His case is closed and referral to a rehabilitation center is a rarity.

—From "Is Our Workmen's Compensation System Satisfactory?" by FREDERICK W. SLOBE, M.D., in *Illinois Med. J.*, February, 1955.

Manager's Disease

"MANAGERS' DISEASE" is a name given to the heart and blood-vessel disorders, including angina pectoris and coronary thrombosis, that are prevalent among and cause premature death to executives, lawyers, foremen, doctors, and important administrators. Mortality of men in such positions at age 45 through 60 is 45% above that of the male population in general. Studies made at the Institute for Industrial Hygiene in Germany credit this high mortality to "working fever," inadequate weekend recreation and too few holidays, lack of proper relaxation, insufficient sleep.

Non-Occupational Cases

WHEN the treating physician is in the plant or directly connected with the plant, he learns the economics of lost time, and the possibilities of job placement, and he begins to think in terms of prevention. The injury cases that he sees along with the rest of the private practice in his office do not have the same impact as when seen together in the plant. A series of eye injuries or lacerations or sprains observed in a plant present a more obvious need for prevention than when they are scattered through all the

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other cases seen in an office. Some plants that have no in-plant physician nor a designated consultant have an agreement with the union that treatment of an injured worker will be done on company time at regular wages. In such situations, the potential savings paid in lost travel time for hiring either a part-time in-plant physician or a designated medical consultant on a fee-for-service basis are easy to compute and should need no elaboration. All of this comes close to home in management thinking. Nevertheless, it is important to emphasize again that injury-case handling is not the totality of a modern industrial medical program. To pursue this further, we find that when consideration is given to developing a medical program this question is raised by management: "What do we do with conditions that are not caused by work?" This is a sensible and significant question and one that must be anticipated and answered. Community physicians, the physician new to industry, management, and employees as well have on occasion misunderstood the whole proposition and therefore reached the wrong conclusions. The truth is that modern industrial medicine sees the non-occupational cases to give first-aid care and counseling and guidance. Such action can permit a worker to continue his productive day, but—and this is much more important—it can shorten an ensuing disability by getting treatments started early by his family doctor. On-the-job counseling gives a man an appraisal of his health status and exhorts him to get needed medical attention. Far from taking non-occupational cases away from the family doctor, a good preventive medical program sends cases to him many of whom would not have gone until the condition had progressed to a disabling stage. Actually, where the industrial physician by practice or by professional agreement does not counsel with workers whose illnesses are not occupational in origin, there is removed from that program a significant part of preventive medical activity. It is at this point indeed where medical men must do more than a little searching of their own souls. Important is the temptation to the part-time physician to refer non-occupational cases to his own private office. But a modern industrial medical program is not to be used this way. Referring non-occupational cases thus to himself is unethical.

—From "The Goals and Benefits of an Industrial Health Program—The Medical Aspect," by HARDY A. KEMP, M.D., read at Pacific Northwest Industrial Health Conference; published in *American Association of Industrial Nurses Journal*, January, 1955.

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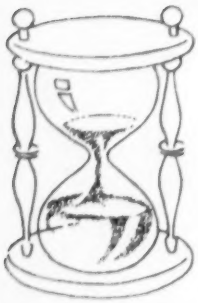

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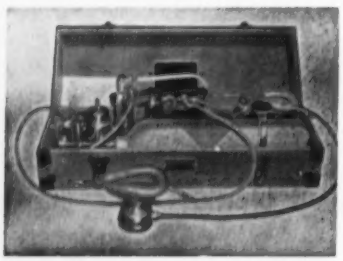

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—From an Address by CHARLES H. PERCY, President, Bell & Howell Company, at a Meeting of the California Personnel Management Association; C.P.M.A. Management Report No. 125.

Sign of the Times

GEORGE E. SPENDLOVE, M.D., Public Health Commissioner, wonders in the face of Utah's growing industrialism whether our state is devoting sufficient attention to industrial health and industrial medicine. He has asked the Public Health Service to make a survey of the state and offer recommendations. Many other state health commissioners are wondering whether enough attention is devoted to industrial health. The increase of sickness absenteeism in 1953 and 1954 engaged widespread attention. While it is true that non-occupational illness causes more men and women to be absent from their jobs than illness caused by industrial environment, nevertheless every student of industrial statistics believes industrial health deserves to receive more attention. Among the progressive steps taken in the industrial health field in recent months are the establishment of local industrial health councils through which the services of general practitioners, consultants, and community health agencies were combined to bring low-cost health programs to small industrial plants. Casualty insurance companies are promoting educational campaigns to improve industrial health, and the National Safety Council continues to work for safety in plants that may be too small to afford the employment of a safety specialist. It is one of the signs of the times that public and private agencies and employers are taking increased interest in the health of the nation's workers for humanitarian as well as economic reasons.

—*Ogden, Utah, Standard-Examiner*, December 26, 1954.

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POSITIONS WANTED

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Industrial Physician: (B-155) Five years experience as physician and surgeon for large manufacturing company; has set up and supervised several health programs, both in industry and public health; has specialized in general, traumatic and orthopedic surgery; age, 53.

Industrial Physician: (JP-155) Four years experience as industrial physician and surgeon; has specialized in occupational medicine; M.D., University of Oklahoma School of Medicine; Excellent references; age, 34.

Medical Director: (RM-155) Five years Medical Director of manufacturing company; M.D., University of Iowa Medical School; has specialized in Industrial Medicine; post-graduate courses in x-ray and cardiology; outstanding administrator; age, 40.

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The Evidence

THERE is no doubt that there is an easily proved association between excessive cigarette smoking and a risk of lung cancer. The difficulty seems to arise from the fact that many persons misinterpret an *association* between two factors to be that one factor *causes the other*, something very much more difficult to prove. The studies reviewed do not clearly establish that excessive smoking causes lung cancer. Their proved association, however, makes further study important, for it cannot be said with certainty that excessive cigarette smoking does not cause lung cancer. It is fairly certain that smoking may contribute to a sense of well-being in some individuals, or may assist one during a disquieting or anxious moment. The risk of lung cancer from smoking is not yet sufficiently established to justify a cause and effect opinion. Until this can be established, it will remain for each individual to weigh the facts available in order to determine whether the benefits from smoking are sufficient to counterbalance the possible risks.

—From "On the Nature of the Evidence on the Association of Smoking and Lung Cancer," by MATTHEW TABACK, and TODD M. FRAZIER, in *Baltimore Health News*, January, 1955.

One Kind of Industrial Health

WHEN a factory abandons a community or a state it does so for sound economic reasons. Decisions to transfer operations or abandon operations are not born of impulse. They are the product of long consideration, thought for the community and for the investors. The decision of the Bigelow Sanford Carpet Company to move the bulk of its operations from Amsterdam, New York, to Thompsonville, Connecticut, came after full consideration of all factors, including the 1,600 New York residents who would lose their jobs. New England towns and cities have experienced

when wintertime

becomes symptomtime

MULTIHIST® +APC

for prompt relief of rhinorrhea, headache, backache and other symptoms associated with the *common cold* . . . Multihist+APC provides the beneficial effects of 3 antihistamines, and the analgesic-antipyretic effects of APC.

A DORSEY preparation.

Smith-Dorsey • Lincoln, Nebraska • A Division of The Wander Co.

Three effective antihistamines instead of one mean less chance of side effects.

Each capsule contains:

Pyrilamine maleate	5 mg.
Prophenpyridamine maleate	5 mg.
Phenyltoloxamine dihydrogen citrate	5 mg.
Aspirin	3½ gr.
Phenacetin	2½ gr.
Caffeine	½ gr.

Dosage: During the first day of cold, 2 capsules initially, followed by 1 capsule at 4-hour intervals. Thereafter, 1 capsule four times daily for 2 days.

Supplied: Bottles of 100, 500 and 1,000 capsules.

SPRAY ON FAST RELIEF FOR BURNS AND WOUNDS

Americaine AEROSOL

WIDELY USED IN INDUSTRY

ORIGINAL SPRAY TOPICAL ANESTHETIC

Stops pain in minutes, relieves for hours, minimizes shock. Quick, painless, sanitary application. Contains 20% dissolved benzocaine, most potent, least toxic of topical anesthetics. In bland, water-soluble vehicle. Use also for pre-debridement of abrasions, etc.

ARNAR-STONE LABORATORIES, INC., 1316 Sherman Ave., Evanston, Ill.

industrial migration and realize fully the problems which such migrations provoke. There are economic factors to which all industries are subject. They cannot always be put aside. Community offers to build a modern plant, as tendered by Amsterdam, financial concessions by labor to management too often come too late, as they did in the case of the New York carpet mill. An understanding of the day-to-day factors which make more secure or imperil job security is to be preferred to last minute compromises. Sometimes there are conditions which no degree of compromise will resolve, but generally a concession here and there will serve all interests. A "healthy industrial climate" is the best barrier to industrial migration, the best magnet to attract new industry. Such a climate can be induced when officials of state and city, labor and management understand and appreciate industrial problems and mutually strive to solve them.

—*Pawtucket, Rhode Island, Times,* February 3, 1955.

Medicine in Industry

WE FEEL that any financial advantage that might accrue as a result of an adequate medical

When Coughs Persist

Dust, smoke, smog, gas and other irritants frequently cause troublesome, obstinate coughs. These non-infectious coughs are rarely accompanied by fever, therefore, do not require heroic treatment.

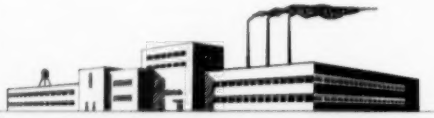
Then "Pertussin" is a welcome word to the busy doctor . . . because it alleviates these irritations safely by its soothing, expectorant, antispasmodic and sedative action.

This well-known formula will never conflict or cause incompatibilities with any medication for other specific disorders you may have occasion to prescribe.

GENEROUS FREE SUPPLY

May we send you a generous supply of Pertussin for use by your patients with enough for your personal medicine chest?

SEECK & KADE, INC. New York 13, N. Y.



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Doctor's Model

RELIEVES INDUSTRIAL STRAINS AND SPRAINS

The unique HOWARD CABINET offers a safe comfortable medium for automatic circulation of soothing, moist heat over the entire body.

Relieves distress of:
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- Postural strains and sprains
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Promotes healing of:
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Self-operating. Resembles easy chair. Contains infra-red heating element and moist-air blower system in enclosed compartment with water pan. Thermostat gives absolute control over moist-air heat. Minerals and oils can be vaporized in pan for inhalation treatments.

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Women's Tension Symptoms Are Different!

When . . . abdominal bloating, heavy, tender breasts, puffiness of hands, face, legs, headaches, backache, mental depression, and explosive irritability, appear regularly before menstruation . . . consider premenstrual tension. These symptoms are due to an excess fluid accumulation. Because they are not of psychic origin, they do not respond to the usual sedatives and anti-spasmodics.

M-Minus 5 effectively reduces premenstrual excess fluid accumulation, and controls symptoms in 82% of cases.[1] By reducing the primary stimulus to uterine spasm, M-Minus 5 controls dysmenorrhea. M-Minus 5 is not a hormone, sedative or narcotic, and does not interfere with the normal menstrual cycle.

1. Vander, M.: Indus. Med. & Surg., 22:183, 1953.

Each tablet contains:
Pamabrom ..... 50 mg.
Acetophenetidin ..... 1/30 mg.
Dose: One tablet q.i.d. starting 5 days before expected onset of menses.

M-Minus 5 ®

PREMENSTRUAL DIURETIC AND ANALGESIC
for Premenstrual Tension and Dysmenorrhea

WHITTIER LABORATORIES, 919 N. Michigan Ave., Chicago 11, Ill.

program should be considered a by-product, for the main purpose of good medical services is not to make money, but to make health. However, industrial medicine does save funds in the following ways: (1) Prompt treatment prevents infections and other complications, thereby shortening the length of the disability. (2) It helps control medical, hospital and insurance expenses. (3) Good medical care is more economical than high compensation payments and settlements. (4) Healthy workers are more productive. (5) Costly disabling injuries and diseases are prevented before they occur. (6) It decreases absenteeism from illnesses non-occupational in origin. (7) It helps prevent the loss of management people through illness or emotional failure. A well-defined medical program benefits the employer as it affords better job placement, assures a healthy work force, improves employer-employee relations, promotes safety and good community relations, and permits proper placement and use of handicapped individuals. Not only the employer, the employee also benefits because it affords proper job placement, informs him about his physical condition, aids in adjustment to his work, protects fellow employees, assists in up-grading, increases period of gainful productive employment, insures a more stable economic security, and prevents development of disabling diseases.

—From an Address by HAROLD A. VONACHEN, M.D., at a Conference on "The Modern Corporation and the Nation's Health," Chicago, February 8, 1955.

new ELASTICFOAM TRADEMARK

the velvet-soft elastic bandage
that stays in place like a second skin

ELASTICFOAM is a completely new type of bandage which combines the best properties of adhesive plaster, elastic, and cotton bandages. It is made by permanently bonding a sheet of multi-slit foam rubber to a superior quality cotton elastic bandage.

ELASTICFOAM stays in place like adhesive plaster—shaving is eliminated, redressing easy and painless.

Fully elastic (stretch 100%), does not narrow, maintains uniform pressure.

Velvet-soft and highly absorbent — may be applied directly over wounds, absorbs at least 5x its own weight of moisture.

ELASTICFOAM can be autoclaved. Economical — may be washed, sterilized and reused many times.

No allergic reactions reported after repeated application, does not mat under plaster casts nor interfere with X-ray.

knee, ankle, wrist, elbow, chest and back injuries

compression treatment of varicose veins, ulcers, phlebitis

postoperative dressings

in place of orthopedic felt

sports strapping—ankles, etc.

Elasticfoam bandages are 5 yards long when stretched, made in 2", 3", 4", 6", 8" widths, 1/8" and 1/4" thicknesses. Available by the square yard for casts and other orthopedic work.

You must see and handle this unique bandage to appreciate its many advantages. Write for descriptive booklet and sample of Elasticfoam.

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Edrisal*
S.K.F.'s antidepressant analgesic

for optimum results in
headache

always prescribe
2 'Edrisal' tablets per dose

Each 'Edrisal' tablet contains Benzedrine* Sulfate (racemic amphetamine sulfate, S.K.F.), 2.5 mg., acetylsalicylic acid, 2½ gr. (0.16 Gm.); phenacetin, 2½ gr. (0.16 Gm.). Available on prescription only.

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REECE ORTHOPEDIC SHOE
No. x175-CG—Men's No. x173-CG—Women's
for
BROKEN FOOT BONES
CRUSHED TOES SWOLLEN FEET

SMOOTHLY finished WOOD SOLE with AIRFOAM insole acts as splint. Keeps injured foot immobile.

Keeps a man on his feet and on the job. Cool, firm but lightweight canvas upper laces entire length . . . makes for perfect fitting even though heavily bandaged. **SIZES—Small, Medium, Large.**

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sedation without hypnosis

Rx Serpasil T.M.

(reserpine CIBA)

A pure crystalline alkaloid of rauwolfia root first identified, purified and introduced by CIBA

In anxiety, tension, nervousness and mild to severe neuroses—**as well as in hypertension**—SERPASIL provides a nonsoporific tranquilizing effect and a sense of well-being. Tablets, 0.25 mg. (scored) and 0.1 mg.

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SUMMIT, N. J.

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get patients back to work sooner

Furacin®

brand of nitrofurazone, Eaton

the effective topical antibacterial

ABRASIONS
LACERATIONS
BRUSH BURNS
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BURNS
PYODERMAS

In major or minor wounds, the effectiveness of Furacin is outstanding. Furacin prevents and treats surface infections so effectively that patients get back to work sooner.

- less costly than comparable preparations
- exceptional antibacterial range
- minimizes malodor and drainage
- facilitates healing by control of mixed infections

All three forms contain Furacin 0.2% in water-miscible bases . . . are convenient . . . easy to use.

EATON LABORATORIES
NORWICH • NEW YORK

THE NITROFURANS—A UNIQUE CLASS OF ANTIMICROBIALS O_2N R PRODUCTS OF EATON RESEARCH

Rauwidrine™

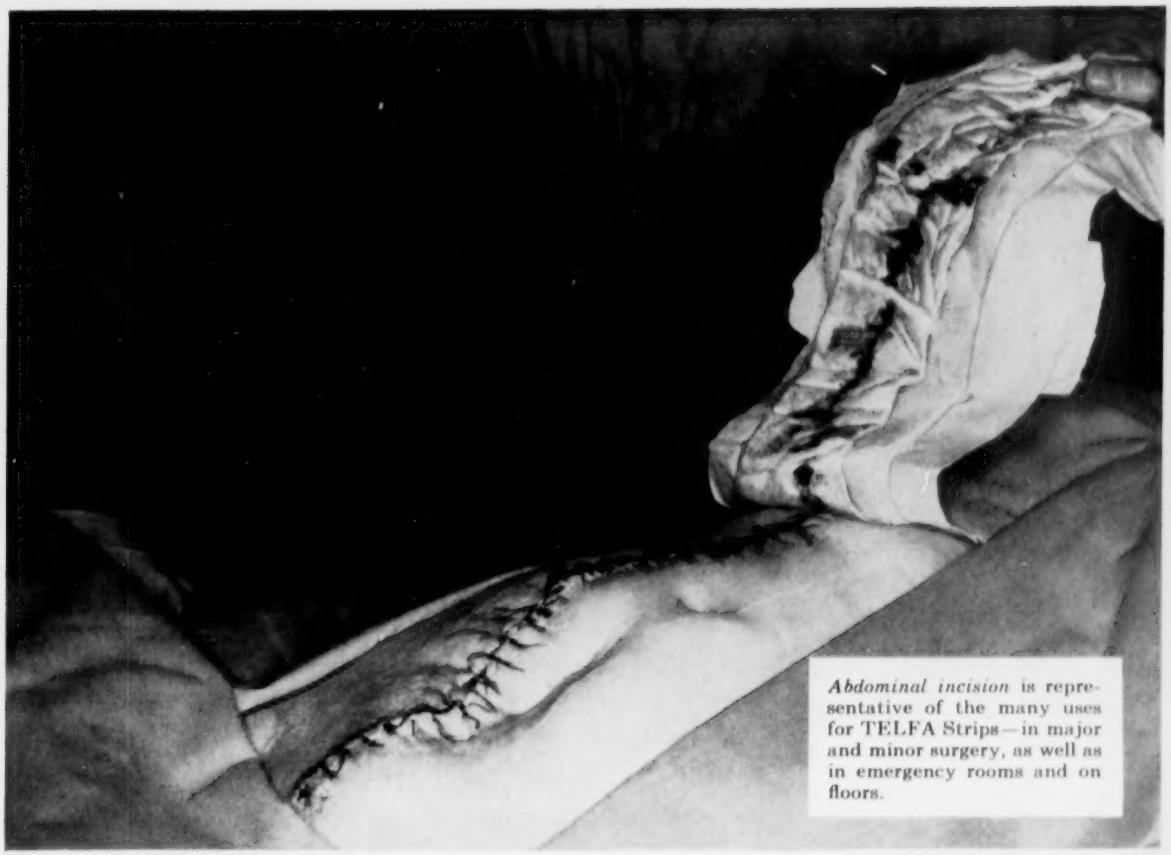
EACH TABLET PRESENTS RAUWILOID® 1 mg. AND AMPHETAMINE SULPHATE 5 mg.

FOR ENHANCED MOOD ELEVATION
EFFECTIVE AS LONG AS NEEDED

Full amphetamine action...
lessened amphetamine reactions

SAFE FOR THE HYPERTENSIVE, TOO

Riker LABORATORIES, INC., LOS ANGELES 48, CALIF.



Abdominal incision is representative of the many uses for TELFA Strips—in major and minor surgery, as well as in emergency rooms and on floors.

NEW TELFA *DRESSING* keeps wounds dry without sticking!

Promotes better healing of all wounds—by primary intention

This new all-purpose dressing is both fully absorbent and completely non-adherent. TELFA Strips keep wounds dry, yet can be changed easily, painlessly, and without disruption of the healing wound surface.

TELFA is a non-wettable, perforated plastic film bonded to *Webril*®, a highly absorbent backing of 100% pure cotton.

Faster healing has been demonstrated in thousands of clinical wounds. Wounds never grow into the dressing, yet are kept dry. TELFA non-adherent dressings are economical, too. They cost no more than conventional dressings, and save considerable doctor and nurse time in changing dressings.

HOW TO USE: Apply TELFA with *film side* directly on wound (precise perforations pass drainage freely, but prevent reverse flow). Then cover with preferred sponge or drainage pad (on slight wounds, no further dressing is needed). Finally, secure in place with adhesive or *Kerlix*® bandage.

Supplied in 2½″ x 4″ and 3″ x 8″ Strips, in hospital cases; and in 2″ x 3″ sterilized envelopes for doctors' offices.

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NON-ADHERENT STRIPS

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Division of The Kendall Company
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prescribe a full measure of comfort for anorectal patients with

DESITIN®

hemorrhoidal SUPPOSITORIES with cod liver oil

In boxes of 12 foil-wrapped suppositories

samples yours for the asking

DESITIN SUPPOSITORIES quickly soothe, protect, lubricate the distressed anorectal mucosa to provide.....

- **gratifying comfort in hemorrhoids** (non-surgical)
- **rapid, sustained relief of pain, itching and spasm without styptics, local anesthetics or narcotics, therefore do not mask serious rectal disease**
- **reduced engorgement, bleeding • safe, conservative**

DESITIN CHEMICAL COMPANY • 70 Ship Street, Providence 2, R. I.

"¡Valiente!" cried the Spanish admiral

He cheered as his launch fished this man and seven more waterlogged American sailors out of Santiago Harbor, Cuba, on the morning of June 4, 1898. This was straining Spanish chivalry to the breaking point, for Richmond Hobson (right) and his little suicide crew had spent the previous night taking a ship into the harbor entrance under a hail of cannonade and deliberately sinking her to bottle up the Spanish fleet.

Hobson, who planned and supervised every detail of the operation, from placing the scuttling charges to dropping anchor under fire, was actually an engineer, not a line officer.

In Santiago Harbor, he led his first and only action against the enemy. But his cool-headed daring made him as much a hero of the day as Admiral Dewey. And proved again that America's most valuable product is Americans.

These Americans—proudly confident of their nation's future—are the people who stand behind United States Series E Savings Bonds. They are the people who, by their spirit and abilities, make these Bonds one of the world's finest investments.

That's why there's no better way to protect *your* future than by investing in *America's* future! Buy Bonds regularly!

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It's actually easy to save money—when you buy United States Series E Savings Bonds through the automatic Payroll Savings Plan where you work! You just sign an application at your pay office; after that your saving is done *for* you. And the Bonds you receive will pay you interest at the rate of 3% per year, compounded semiannually, for as long as 19 years and 8 months if you wish! Sign up today! Or, if you're self-employed, invest in Bonds regularly where you bank. They're as safe as America!

For your own security—and your country's, too—

invest in U.S. Savings Bonds!

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Are the health and efficiency of your workers

WATER-SOLUBLE?

They may be, to the extent that they depend for their vigor on an adequate daily supply of the water-soluble vitamins — the essential factors of the B-complex and vitamin C — so easily lost through perspiration and metabolic destruction.

Allbee with C 'Robins' provides *saturation dosage* of the B-complex vitamins plus

250 mg. of vitamin C

per capsule — the highest ascorbic acid content of any preparation of water-soluble vitamins.

They may be what your workers need!

ALLBEE® WITH C

Robins

IN EACH CAPSULE:	
Thiamine HCl	15 mg.
Riboflavin	10 mg.
Nicotinamide	50 mg.
Ca pantothenate	10 mg.
Ascorbic acid	250 mg.

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Hand, Elbow, and Foot Paraffin Bath with removable stand — electrically heated with thermostatic control.

Literature on these and other equipment on request

The Prognosis in PSORIASIS

RIASOL

Bad, says the dermatologist, until he tries RIASOL. In a series of 231 cases treated by various medications, Lane and Crawford* reported only 16.5% remissions.

The use of RIASOL greatly improves the prognosis. In a series of psoriatics treated with RIASOL after other medications had failed, the cutaneous lesions were completely cleared or improved in 76% cases. In the successful cases the skin patches cleared up in an average of 8 weeks.

The patient with psoriasis must be encouraged, not discouraged by a hopeless prognosis. Psychiatrists have reported neuroses in psoriatics because of undue pessimism on the part of the attending physician.

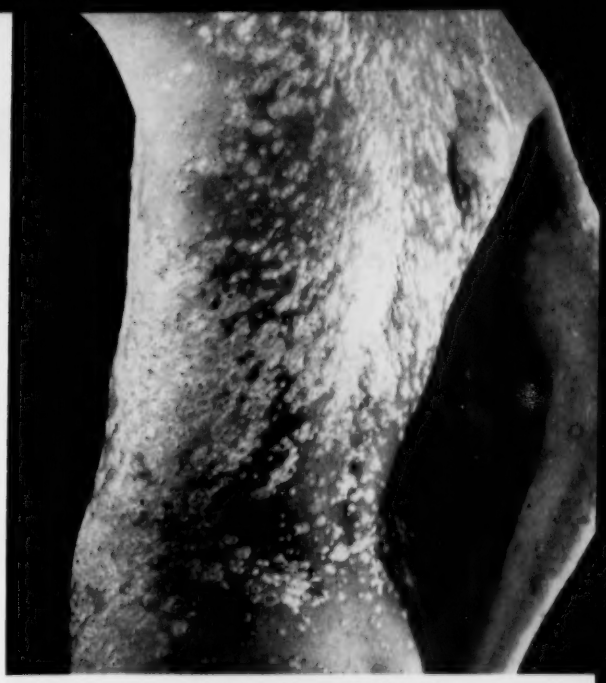
Control of psoriasis by use of RIASOL often makes it possible for young men and women to marry and lead normal lives. This may make the difference between happiness and despondency.

RIASOL contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol in a washable, non-staining, odorless vehicle.

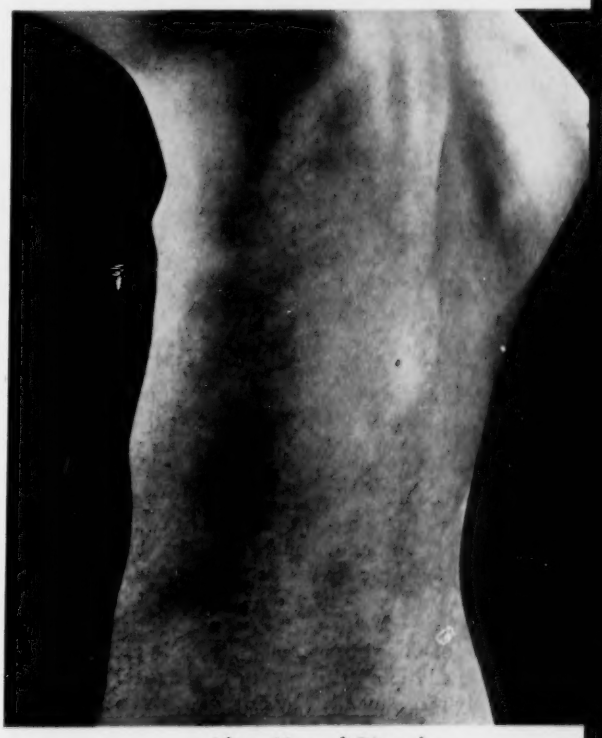
Apply daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. No bandages required. After one week, adjust to patient's progress.

RIASOL is supplied in 4 and 8 fld. oz. bottles at pharmacies or direct.

*Arch. Dermat. & Syph. 35:1051, 1937.



Before Use of Riasol



After Use of Riasol

MAIL COUPON TODAY —
TEST RIASOL YOURSELF

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12850 Mansfield Avenue, Detroit 27, Michigan

Please send me professional literature and generous clinical package of RIASOL.

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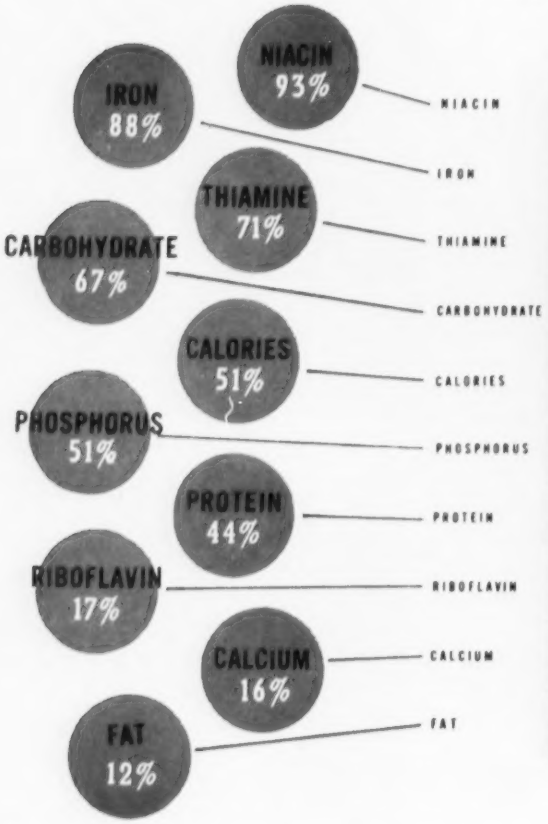
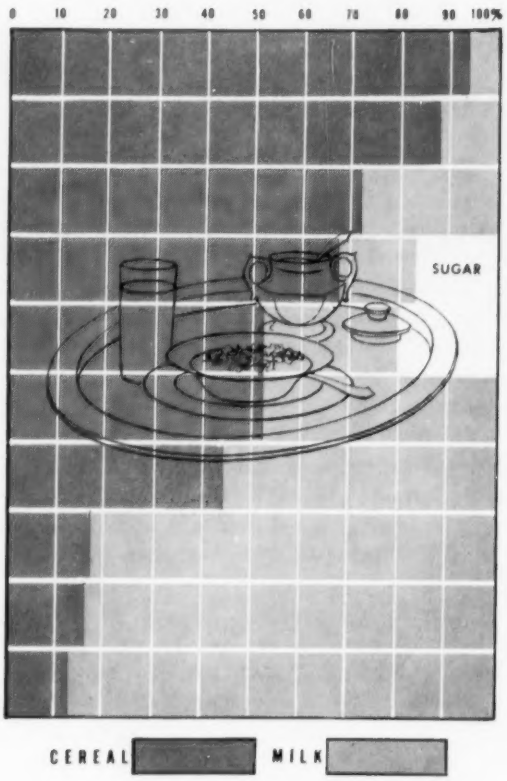
RIASOL for PSORIASIS

CEREAL AND MILK MAKE

An Equal Contribution





That breakfast cereals make a significant contribution to the overall nutrient content of the cereal and milk serving consisting of 1 oz. of breakfast cereal, 4 oz. of milk, and 1 teaspoonful of sugar, is readily apparent from the bar chart. In the case of five of the nine nutrients common to both, as well as in calories, the breakfast cereal alone provides more than 50 per cent of the total amounts contributed by both cereal and milk, and almost 50 per cent of the protein.*

The values shown demonstrate that breakfast cereals are significant sources of many essential nutrients. Their inclusion in the balanced breakfast goes far in satisfying the daily requirements of the nutrients they contribute. For this reason they are widely recommended by nutritionists as an important component of a basic cereal breakfast consisting of fruit, cereal, milk, bread and butter.

As a service to teachers and their students and as a result of twelve years of research, Cereal Institute offers free authoritative and coordinated cereal and milk and breakfast teaching materials. Write for yours today!

***These figures are based on composite averages of all breakfast cereals —whole grain, enriched, or restored to whole grain values of thiamine, niacin and iron.**

Cereal and Milk Festival No. 2

The program of long range cooperation between the American Dairy Association and the Cereal Institute announced over a year ago goes into its second year with the endorsement and support of both industries.

In 1955 the event is known as

"Spring Cereal and Milk Festival"

and will be launched the middle of April. In the average year 2½ *Billion Quarts of Milk* are eaten with breakfast cereals.

You never outgrow your need for Cereal and Milk.

CEREAL INSTITUTE, Inc., 135 South La Salle Street, Chicago 3, Illinois

A research and educational endeavor devoted to the betterment of national nutrition

BUFFERIN®

THE BETTER TOLERATED SALICYLATE FOR INDUSTRIAL PATIENTS

Avoid Lost Hours from Headache, Other Minor Aches and Pains

Give BUFFERIN® because...

1. It gives fast pain relief—acts twice as fast as aspirin.[1]
2. Even large doses seldom cause gastric upsets.[2]

Avoid Lost Days from Minor Arthritic or Rheumatic Problems

Give BUFFERIN because...

1. It provides effective, better-tolerated relief of pain. Patients can continue working when you give BUFFERIN.
2. Arthritics are markedly more susceptible to gastric upsets with straight aspirin than the general population. But they tolerate BUFFERIN well.[3]
3. The antacids in BUFFERIN do not lower the blood salicylate levels as sodium bicarbonate does.[4]

References: 1. J. Am. Pharm. Assoc., Sc. Ed. 39:21 (Jan.) 1950. 2. Ind. Med. 20:480 (Oct.) 1951. 3. In Press. 4. J.A.M.A. 141:124 (Sept. 10) 1949.

BUFFERIN contains acetylsalicylic acid (5 gr. per tablet), for prompt analgesia, plus magnesium carbonate and aluminum glycinate. *For ease in dispensing, order the convenient Industrial Package*—250 individual aluminum foil-lined packets, each containing two BUFFERIN tablets. Available through your regular jobber.

WHENEVER SALICYLATE THERAPY IS INDICATED
GIVE BUFFERIN Acts Twice as Fast as Aspirin
Does Not Upset the Stomach

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you can produce
prompt, prolonged
surface anesthesia
with one application of

NUPERCAINAL®

Contains Nupercaine® (dibucaine CIBA), one of the most potent and long-acting anesthetics.

Effective in low concentration —sensitization rare (nonnarcotic —not related to cocaine or procaine).

Useful whenever surface anesthesia is required—burns, surgical dressings, hemorrhoids, abrasions, etc.

Ointment (dibucaine ointment CIBA), 1% Nupercaine in lanolin and petrolatum base.

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